THE BUILDER

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THE BRITISH INSTITUTE OF INDUSTRIAL ART.

SOMEONE, probably an architect, is reputed to have exclaimed at the conditions which required him to walk a mile or more on purpose to see a cottage which had been properly designed. The critic is justified in some such feeling in being called upon to give special notice to joinery, pottery, textiles, printing, &c., which under happier circumstances industry—but for the system which has grown up—would ordinarily supply. So we see collected together within the North Court of the Victoria and Albert Museum a very various collection of craft work offering a leaven to the present state of things. And there is really a great amount of very creditable work, so much that it is hardly possible to summarise it or to pick out particular examples without neglecting others just as good. We see the influence of the "Morris" group on the younger workers, and this is a good sign. Another very important one is the number of local guilds, federations and art schools, who contribute to the exhibition. These local craft centres spreading throughout the country—these small workshops on sound craftsmanship lines—justify in us the hope of that extension of the small industry, so ameliorating present industrial conditions and perhaps ultimately largely superseding them.

Case No. 1, with examples of textiles and decorated boxes, should not be missed, or the flag over the entrance, "Arms of Caius College," by Kruger Gray. No. 2, panelled chest in English oak, designed by H. Wilson, is quite a fine example touched with a little virtuosity; the craftsman appears to have registered Mr. Wilson's design on the material rather than through it, and it includes the want of breadth which such a limitation imposes. The same applies to No. 7, though both are in many ways excellent. The cases should be carefully examined as they contain many attractive features, but too many to enumerate here. Case No. 66, containing well designed glass and some good textiles, is one of the best. The various exhibits of this firm of craftsmen, carrying on work on traditional handicraft lines at Broadway, Worcestershire, are one of the features of the exhibition. The charmingly worked samplers, Case No. 95, Nos. 108–9, by Anne Simpson and Dora A. Walmsley, should be noticed. Good examples of pottery are shown in Case 125 and Case 126, but the pottery on the whole is of very varying merit. In a general survey such as this we can only note a few examples here and there. Mr. Anning Bell's fine design, which faces us as we enter, for the mosaic "St. Andrew," for the Lobby of the Houses of Parliament, is suggestive, but in such cases the results are determined not here, but in the proper working of the material when executed in mosaic. The same artist's sketch for a memorial window to Edward Stott, A.R.A., is interesting, otherwise the display of glass cartoons and sketches calls for no special notice. Some of the best work in the sense of the improvement it shows is in the printing section: there is no direction of industry in which more progress has been made.

We must not end these scattered criticisms without referring to the "Church and Monumental Art Section." This is a very helpful addition, and calls attention to more suitable and becoming ways of treating monumental masonry, though we doubt whether No. 456 shows the best direction for the abilities of Mrs. Phœbe Stabler who, in addition to this exhibit, shows a more characteristic and buoyant example in the little garden figure of a boy. There are excellent textiles shown, and the usual display of posters. A very attractive exhibit is that of a room designed for a cafe by Russell & Sons, the furniture and surroundings of which are all made in their workshops, suggesting how far more agreeable such tasteful and genuine surroundings would be over the marble veneers and false glitter of others we can think of.

Exhibitions such as this—and there is much sound and beautiful craftsmanship included in it—none the less set us thinking, for the character of such exhibitions to-day serves rather towards confusing than enlightening the public mind. Where we shall look for art, and where find it, depends more on ourselves than on exhibitions. If we were to regard the British Institute as the source and exemplar of the best craftsmanship to-day, which its official character countenances, we should be much mistaken. Some of the finest craftsmen are not to be found in it at all. And perhaps the Institute realises its objects all the better in thus accepting its own limitations; based on industrial production, it endeavours to promote better standards through the exhibition of work alongside it of more taste and character. It must not, however, be forgotten that the work of most creative and distinguished quality, which is an end in itself, has nothing to do with commercial industry, and it should not be looked for in such an exhibition. Organisation tends to promote the good average of the time, not the best work, which is more often its own security. No doubt it is difficult to draw any precise line, and the Institute, like most bureaucratic organisations, fosters what it understands. It may be doubted, however, to take an instance, whether the wholly personal quality of Mrs. Stabler's work is not in some danger to its own point of view in the bias set up through such an exhibition; for the draw towards an applied usefulness for such work may detach it from its own more authentic impulse, from which it should not be withdrawn. The arts suffer much to-day from the artist seeking his work too much, from watering his own garden. And though there are many instances in this exhibition in which the talent of the craftsman is helped by this applied usefulness for his work, it is impossible not to see the work of other craftsmen occupying a perilous borderland, balanced between art and commerce, uncertain of their hold on either. In such a view there enter considerations of the highest import. If, for the purpose of improving industry, art were to suffer—if it in any way compromised the demands of its own nature—such compromise were to choose the worse for the better and injure both. This difficulty arises through the absence of tradition, owing to which good craftsmanship has been removed from its natural setting, so that we now look for it in a special situation, instead of emerging unconsciously out of the national industry, which it did until the machine took the craftsman's skill away.

A more democratic basis is growing for art, and therefore a truer relation to life, but accompanied by all the dangers lying in a half-educated democracy, and we have therefore to be most careful lest, in raising the average, promoting the good we do see, that we do not obscure the best, or think that art can be circumscribed by its applied usefulness only, so shutting out the larger horizons from our eyes.

NOTES.

St. Martin's-le-Grand Site.

It is recorded that Pericles after the Persian wars found employment for the disbanded soldiers in building the Parthenon. We might recall this and the inferences to be derived from it when seeking directions of activity for our unemployed, and consider the possibility of constructing romances as well as roads. This thought occurs to us when reading of the recent action of the Goldsmiths' Company in buying part of the site of the old General Post Office in St. Martin's-le-Grand, so that the fine architectural features of their hall should not be hidden by new buildings. But does not this praiseworthy and public-spirited action suggest that with such a lead we ought to go yet further? Would it not be an immense improvement in a crowded district to secure the whole site, and to give employment by laying it all out as a public place, with lawns and walks and sheltering trees? In such a situation the improvement would be so great, so spacious and enlarging to its amenities, that we have only to glance at the site to see its appropriateness for such development. An improvement like this cannot be estimated on economic values as we understand them. The value of the site for rents is a less contribution to the wealth and dignity of the city than its value for beauty. Nor is the idea to be rejected on such grounds—or ground rents? We need the spirit of a Pericles to enlarge our conceptions of profit and the scope of possible employment, and to appeal to the artist in all of us. Does not the imagination reach out to greet this possible transformation of a great site, from its mournfully barricaded and hideous defacements through advertisements into a gracious open place adorned by nature and art, and may not the example of a Pericles help us to find courage for such an aim?

The Factory Beautiful.

At the meeting of the Industrial Welfare Conference at Oxford Mr. Eldred Hallas (General Workers' Union, Birmingham) condemned the architecture of modern industrial buildings. He said it was a pity that when works and factories were designed utility was considered almost to the exclusion of any idea of beauty. Why should not factory areas be as beautiful and desirable, he said, as residential areas, and interspersed with dwelling-houses, one vying with the other in beauty? It was surely as desirable that a factory should be approached by a boulevard as the mansion of its owner. We may all feel sympathy with the views expressed by Mr. Hallas, but we think it can be claimed that where architects are concerned in the erection of factories and industrial buildings utility is not always considered "almost to the exclusion of any idea of beauty." The ideas of clients not infrequently clash with ideas of beauty, but we know of a considerable number of instances in which this conflict does not exist.

Church of St. Trophisme, Arles. (*See p.* 438.)

New Confederations.

New movements are emerging of international importance aiming at a more national organisation for art, and its greater influence in the State, and we ought not to look askance where great ideas are concerned if they move first in rather nebulous shape or fail to give generous consideration for the proposals contained in them. Nor should we, in examining the proposals contained in the Report of the British Confederation of Art, assume that they are hostile to existing organisations. To invest associations with wider aims than that of preserving themselves only, to detach them from the exclusiveness of group and party only to a wider activity, is rather to penetrate them with fuller life. We can all agree with the claim for the recognition of the professional worker equally with that of capital and labour, and that his interests are equally important to the welfare of the State, and should be set on a footing whereby his economic interests are not left to everybody but himself, which in practice means, as has been said, "creating prosperity for everyone but himself." Such an improvement would bring a new strength and development to the State itself, art exercising its proper influence not as only concerned with itself, but with conceptions of government and its direction to more enlightened ends.

The New "Tiers État."

Whereas at present we divide the interests of the community as those represented by capital and labour, these new movements make the claim—quite rightly—to include as one other equal interest in the State the capital of the Mind. There are endless considerations for the public welfare in which the arts could exercise beneficial help, but have no organised representation or security for their proper influence over such matters. Better conditions for the artist are, we know, difficult to provide, nor is he himself as yet endowed with that larger civic aim which would make his help wholly disinterested and effective, though a more civic sense is growing in our younger men. It is felt by them that isolated art societies are not the best means of realising the present needs and that some larger confederation working

Dovecote at Chateau d'Argilliers. (*See p.* 438.)

also through them, co-ordinating and enlarging their aims, would effect results of more public utility. At the same time, we must also regard the difficulties. It was his own brother artists who failed to recognise the claims of Millet, of Linnell, of William Blake, and others. What confederation can unite the good—that we can most of us see—with the best, which, alas! is so seldom seen? Mr. H. V. Lanchester, President of the Town Planning Institute, tells us that "Combination would help to reduce that evil to a minimum and give him (*i.e.*, the artist) a chance of realising his deepest and truest conceptions." Deepest and truest conceptions are oftenest realised, not where ease and competence assist them, but by the inviolable fortitude of soul in the noblest nature, and though we can sympathise with many of the aims of this new Confederation, we must not expect Utopias, or that the best things are to be achieved without personal conviction and sacrifice.

The British Institute of Industrial Art.

THE exhibition of this organisation (referred to in our leading article) raises the thought that we must not depend too much on what is brought before us through such organisation as representing more than it does, or that it diminishes our own responsibility to see other and wider aspects of it, and thus at the end we reach the true conclusion that all fostering and improving aims for art are in one sense a constant danger to the very object and the only security for its lasting welfare, and the blessings with which it can endow life lie in an educated and enlightened people. For the effective usefulness of any such organisation is shown in discovering and promoting the finest work, not in obscuring it, and if the effect of the multitude of exhibitions, so much organisation, the development of sounder craft practice—all good in themselves—appeared to us as covering the whole field, the public would be farther away from the reality than before. Under bureaucracy there is no worse danger than that of the good becoming the enemy of the best, and it is one it behoves us to regard. For the best creative achievement contains always a sort of challenge in it, it disputes our accepted "good," and bureaucracy fears it as a challenge to its own supremacy, as truth is always a challenge to anything but truth. When "encouraging" art let us not forget the artist.

Lectures on the History of Architecture.

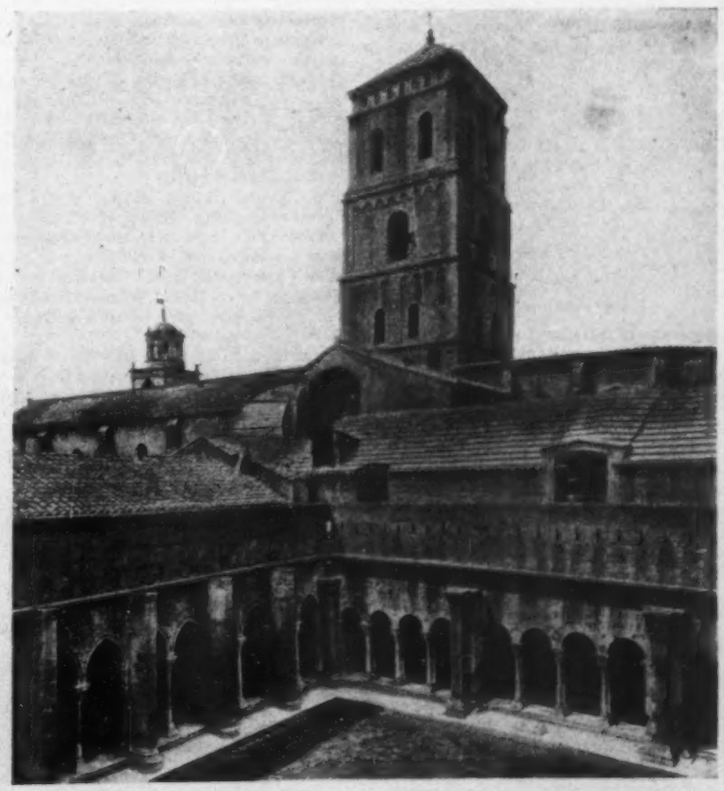
THE University Extension Board of the University of London, South Kensington, have arranged for the coming Session a number of very interesting courses of lectures on History, Literature, Art, Architecture, Geography, Economics, &c., to be delivered in various parts of London and the suburbs. Amongst these is a fully illustrated course on "The History of Architecture (Part I, Ancient)," to be given by Sir Banister Fletcher, F.R.I.B.A., at the Central School of Arts and Crafts, Southampton-row, on Wednesday evenings, at 6 p.m. The subject will be treated in a popular and non-technical way, and the course will be equally suitable for the professional as well as the non-professional student. We wish more lectures of this character could be arranged, not only in London and other large towns, but in suburban areas where people live.

Church Congress Exhibition.

THE Church Congress Exhibition, which is held during Church Congress week, will be opened on Saturday in the Drill Hall, Mill Bay, Plymouth, and will close on September 28. The Exhibition consists of two sections—a Loan Collection and a General Section—which will include the stalls of church furnishers, artists in glass and metalwork, &c., and we understand that a most comprehensive and interesting exhibition has been arranged. *The Builder* model of Old St. Paul's will be shown, as well as several drawings by the late H. W. Brewer.

A Long Record.

A LONG record of service to the profession is that of Mr. Maurice B. Adams, who is now retiring from the *Building News* after some fifty years of editorial work with our contemporary, a record only, we believe, once exceeded. Mr. Adams has closely followed the development of modern English architecture, of which he has written and illustrated a very large amount and has contributed interesting papers to the R.I.B.A. He will carry with him into his retirement the good wishes of a large number of friends.



Church of St. Trophisme, Arles: The Cloisters. (*See p.* 438.)

GENERAL NEWS.

Professional Announcements.

Mr. L. G. Williams, architect and surveyor, has removed from 108, Vaughan-road, Harrow, to new offices at Greenhill-chambers, 8, Greenhill-parade, Harrow (telephone, Harrow 1034), and will be pleased to receive catalogues, &c.

The London offices of Messrs. Chas. Heathcote & Sons, whose head office is in Manchester, have been changed from 110, Cannon-street, to 38, Parliament-street, S.W. 1.

Messrs. Robinson & Phipps, architects and surveyors, have opened an office at Midland Chambers, 39, London-road, Leicester, and will be pleased to receive manufacturers' catalogues.

Appointment.

Mr. H. W. Butler, County Surveyor for Cumberland, has been appointed County Surveyor for Shropshire.

Devonshire Park, Eastbourne.

At a meeting of the Eastbourne Town Council the question of the purchase of Devonshire Park was discussed. The premises comprise about twelve acres of ground, a concert hall accommodating 2,500 persons, vaudeville and lecture halls, and a number of pavilions, swimming and other baths, restaurant, tea rooms, bars, &c. It was stated that since the town on a poll rejected an offer to take £110,665 there had been a further capital expenditure to the amount of nearly £10,000. After discussion the Council instructed the committee to ascertain the precise terms on which the company are prepared to sell. It was stated that the purchase would necessitate the promoting of a Parliamentary Bill, which would give the ratepayers an opportunity of either approving or rejecting the proposal.

Payment by Results.

A correspondent of *The Times*, dealing with the question of payment by results in industry, refers to a system in force in America. This method he outlines as follows:—"At the end of the year, or at any other time, a firm will calculate its gross profits, and deduct everything but interest on capital. The balance represents the net profits of the busines for the purposes of the plan. The firm then deducts an amount which would represent a fair return upon its capital, having regard to the character of the business. For an average undertaking, with no unusual risks, this might be fixed at about 6 per cent. The balance then remaining would be divided, as a rule, equally between the firm and its employees. The employees' share would form a certain fraction of the total yearly wage and salary list. Supposing it were one-tenth, then each employee would receive a 10 per cent. bonus."

Road Planning.

In the course of a letter to the Press, Mr. Thomas Adams, Consultant to the West Middlesex and Thames Valley Joint Town-Planning Committee, states that there is urgent need for a constructive policy in planning highways in advance of expending money on new construction. "Owners of land abutting on highways and local authorities have," he said, "both got responsibilities, and should share in the cost of securing the desired improvements. How is the matter to be dealt with in a manner that will meet the just claims of the owners and not impose too big a burden on the public purse? There are too many difficulties confronting both owners and authorities at the present time, and some compulsory power is needed to be vested in the Ministry of Transport to enable it to bring about the joint action that is necessary and an equitable apportionment of cost between the public and the owners of land. There is also need for more regard to be paid in connection between different phases of road traffic and building problems; for instance, to the interrelation between use, heights, and densities of building and road widths."

The late Mr. J. B. Everard.

The death is announced of Mr. John Breedon Everard, J.P., M.Inst.C.E., F.R.I.B.A., which occurred at his residence, Woodville, Knighton Park-road, Leicester, on September 12. Mr. Everard, who was aged 78, had been ill for some time of an affection of the heart.

Mr. Everard, who was born at Groby, Leicester, carried out many important works as an engineer and architect. As resident engineer he superintended the construction of the Kentish Town to St. Pancras section of the Midland Railway, including the foundations and roof of the station itself and the tunnel underneath to link up with the Metropolitan line. After returning to Leicester and commencing practice on his own account he designed and built the Leicester Cattle Market in 1871, a work considered to be one of the best of its kind in the country. He was one of the originators of the great Derwent Valley water scheme which supplies Sheffield, Nottingham, Leicester, and Derby with water, and he constructed the Leicester section from Sawley to Hallgates (Leicester), including the aqueduct over the River Trent. He was also responsible for the construction of the Swithland Reservoir at Leicester and the works connected with it. In conjunction with his firm, Messrs. Everard, Son, & Pick, he carried out some large architectural works, including the Leicestershire and Rutland Counties Asylum at Narborough, the Leicester Technical and Art Schools, and the remodelling of the Leicester Royal Infirmary.

Mr. Everard was a Justice of the Peace for Leicester and the county, and High Sheriff of Leicestershire in 1913–14, and during his year of office presented a mace to the city as a memento of his association with Leicester in so many municipal enterprises. He was a keen antiquary and he did good service as a member of the Church Extension Board.

Mr. Everard married, in 1868, a daughter of the late Mr. Samuel Mumford, of Dartford, Kent, and he has had two sons and two daughters.

COMPETITION NEWS

Burgess Hill.

The design of Messrs. George Baines & Son, F.R.I.B.A., of 121, Victoria-street, Westminster, S.W.1, has been placed first in the competition for new premises at Burgess Hill, for the Hayward's Heath Co-operative Society, Ltd. The estimated cost of the structural work is £8,500.

Taunton.

Designs for a war memorial, for the Council of Taunton School. (See advertisement this week.)

Dudley.

The Public Works Committee of Dudley Town Council announce that they have approved the conditions of competition for the designs of the proposed "Brooke Robinson Memorial" and war memorial, to be erected on the site at the junction of St. James's-road and Priory-street, and had, on the nomination of the Royal Institute of British Architects, appointed Mr. W. Curtis Green, A.R.A., to act as assessor. The conditions provide that the competition shall be an open one; that premiums of £300, £200, and £100 shall be given, the first-named sum to be absorbed in the fees for the erection of the buildings; and that the proposed new buildings harmonise with the existing Town Hall and Police Station. Sending-in day, January 5, 1924. (See advertisement Sept. 14.)

Eastleigh and Bishopstoke.

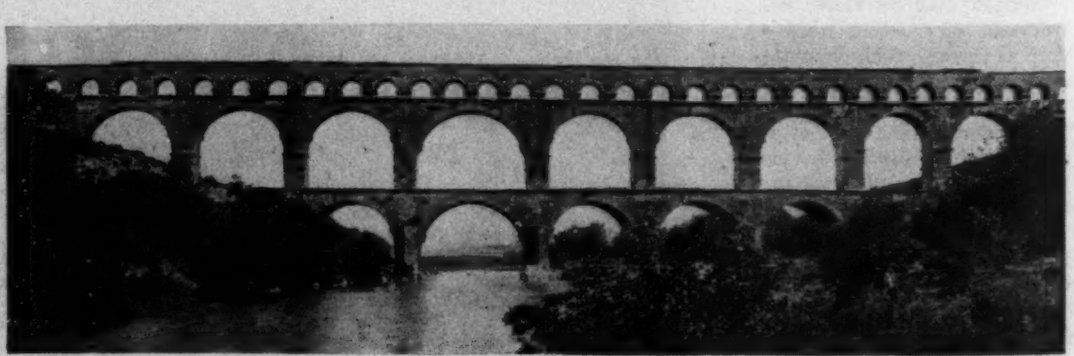
FOR THE U.D.C.—Designs for a new assembly hall and extension of council buildings. Premiums 50, 30 and 20 guineas. Sending-in date, December 3. *Banned until conditions are approved by R.I.B.A.* (See our issue for Aug. 24).

Southsea Common Lay-out Competition.

FOR THE B.C.—Conditions and particulars of premiums will be forwarded on application to the Town Clerk. Sending-in date, October 20.—*Banned by R.I.B.A.*

Other Competitions.

Other competitions still open include the following (the dates given are, first the sending-in date, and second the issue of *The Builder* in which full particulars were given):—Singapore College (Jan. 1, 1924; March 30). Hull Art Gallery (Nov. 5; May 4). Mint competition for plaques (Sept. 30; May 25). Colour scheme (Sept. 30; June 29). Memorials to the Missing (Jan. 1, 1924; Aug. 3). Halifax Lay-out—*Banned by R.I.B.A.* (Oct. 1). Swansea Masonic Hall (Oct. 3). D.I.C. House, Manchester (Oct. 15; Sept. 7). Chiswick Embankment—*Banned by R.I.B.A.* (Oct. 15; Sept. 7). Coatbridge War Memorial Aug. 31).



Le Pont du Gard, Nimes. (*See p. 438.*)

THE EARTHQUAKE IN JAPAN.

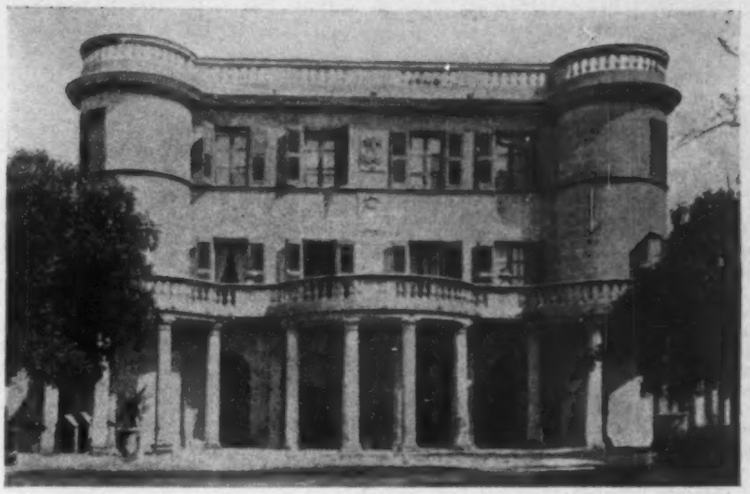
BY CHARLES DAVISON, Sc.D.

THE destruction of buildings during the recent disaster in Japan was due to three causes—to the earthquake itself, to the fires that broke out at once through the breaking of gas-pipes, and easily spread as the water-mains were injured, and to the sea waves that followed shortly afterwards. To apportion the damage among these three causes is at present impossible, though it would seem that in Yokohama the shock was mainly responsible; in the naval station of Yokosuka partly the shock and partly the sea waves; while the city of Tokyo probably suffered as much from fires as from the shock that started them.

Buildings in Japan are constructed with a view to the danger from earthquakes, and the comparatively small loss of life in recent shocks shows how effective the precautions have been. For instance, in the Mino-Owari earthquake of 1891 only 190 lives were lost out of a total of 165,000 at Nagoya; in the Messina earthquake of 1908 about half the population of that city were buried in its ruins, and, if anything, the shock was stronger at Nagoya than at Messina. Notwithstanding the heavy loss of life in the recent earthquake, the death rates are comparatively low, only 5 per cent. in Tokyo and 7 per cent. in Yokohama. Comparing these with the figures for less violent earthquakes in Italy—for example, 71 per cent. at Montemurro during the Neapolitan earthquake of 1857, 81 per cent. at Avendita during the Norcian earthquake of 1703, and 91 per cent. at Avezzano during the earthquake of 1914—it is evident that, but for the careful construction of Japanese houses, the tale of disaster would have been very much higher.

In a recent number of *The Builder*, I gave a short summary of Professor Omori's paper on the behaviour of the steel-brick buildings at Tokyo during moderately strong or semi-destructive earthquakes. Professor Omori concluded that properly-built steel-brick buildings will never be totally destroyed by an earthquake, however strong, and that the worst that could happen to them would be the production of cracks in curtain-walls. A detailed examination of the effects on these buildings will be of considerable value. At present it is somewhat uncertain whether the damage was caused by earthquake or by fire. The Kaijo Building at Marunouchi, the oldest of the series and finished in 1919, collapsed, causing thousands of casualties; but according to more recent accounts most of the high concrete buildings show fissures only in the third-floor façades; above and below that floor there is little harm done, a result which is somewhat opposed to Professor Omori's belief that the risk of damage is less in the higher stories than in the lower.

Most of the buildings in Tokyo were made of wood, and it was to this that their rapid destruction by fire was due. Such houses collapsed at once under the shock, the walls bulged outwards and the heavy roofs fell in and so imprisoned thousands of people, many of whom were afterwards burned. It is estimated that out of 440,548 houses in Tokyo no fewer than 411,035 collapsed or were burnt. The percentage of loss was even higher in other places. At Yokosuka only 150 out of 11,800 houses were not destroyed; at Yokohama 100 houses are said to have escaped damage, while 71,000 were ruined. Much of the destruction was due not to the first great shock but to the less violent shocks that followed. For instance, all the bridges across the river in Tokyo, which were densely crowded with refugees from the fire, collapsed during a later shock and many thousands were drowned or killed by the fall.



Chateau d'Argilliers. (*See p.* 438).

CORRESPONDENCE.

[While we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

Sanitary Arrangements, House at Hampstead.

SIR,—I was interested in the plans and elevations of a house in the Hampstead Garden Suburb which you illustrate on p. 416 of last weeks' *Builder*, but was surprised to see that the w.c. on the ground floor is shown leading directly off the kitchen. This does not seem to be a very desirable arrangement according to modern ideas, and, of course, is not allowed under the by-laws of London and most of the surrounding districts. If the building by-laws of Hendon permit of this it is time they were revised and brought up to date.

W. HASLIP.

Leyton.

Payment by results in the Building Industry.

SIR,—It may not be out of place for one who has had a number of years' experience in connection with the "payment by results" system to furnish a few remarks by one who has "suffered" as an employee.

It is anticipated that the "bait" of a share of a firm's profits would require a lower salary in consequence. When the time comes, however, to participate in results, the reply invariably is that the auditors make out there is nothing due. Only recently an admission was made by a director that there were profits made, but it had been decided to add them to the "reserve" fund. The only course open to an employee is to secure a smart accountant at an enormous cost to investigate the books; that is, if the employee can bear the cost, which is doubtful.

In another case, notwithstanding the large percentage put down for overhead charges, other charges such as printing and advertising were introduced to procure a balance on the wrong side. Numerous other cases could be furnished from personal experiences extending over a number of years, during which "heart and soul" have been put in to increase the "turnover," and even written agreements "turned under," leaving one no other option but to seek fresh fields and pastures new. Trade Unions compel additional payment for overtime, but in my capacity there is plenty of overtime without extra payment or share of profits.

Esteeming your kind insertion of this letter,

"ESTIMATOR."

["Estimator's" experience has been unfortunate. We do not 'share' his belief, if it is his belief, that employers would not act honourably in the event of a "payment by results" system being inaugurated.—ED.]

The Scarcity of Skilled Labour.

SIR,—Having read the article on the above in *The Builder* of the 14th inst., the following may indicate the seriousness of the shortage of skilled labour in the higher branches of joinery. A short time since I advertised for fifty joiners for airtight showcase work, and out of numerous applications I received there were only two I could entertain, and in consequence orders are delayed for weeks.

EDWARD VALE.

Weston-super-Mare.

Houses and House Agents.

SIR,—Referring to your article in last week's issue, I am unfortunately one of the large number of would-be home dwellers if houses could be rented. I have travelled miles and spent much money in fares travelling to see the few houses offered for rent.

The outlook is certainly not promising, and I do not think much help can be looked for from agents, for they naturally prefer to sell a house, as their commission is so much more.

I will not lengthen this letter by giving examples of agents' descriptions as compared with the reality, but one case recurs to memory where, going to see a much-belauded house, I found it overlooked a sewage farm, or another recommended as quiet which overlooked Brooklands.

As I hope some day to get a house I must remain anonymous.

"HOMELESS."

The Prevention of Dry Rot.

A correspondent writes asking for information as to the suitability of an acid dressing to stop rot.

Railway Improvements in Wales.

Schemes representing approximately an expenditure of £250,000 on the Central Wales section of the Great Western Railway have been put in hand. At Aberystwyth the station is being enlarged and the line doubled to Llanbadarn. The Forden-Welshpool extension is nearing completion. New works at Harlech Station, costing £10,000, are well in hand. Pwllheli Station has been remodelled, and Dovey Junction platform has been raised in preparation for a double line to Machynlleth. Oswestry Station is being enlarged at a cost of £61,000. About 500 Oswestry railway workers will meet shortly to discuss a proposal to build a garden city suburb at Oswestry in connection with the Great Western Railway Company's scheme to assist employees to build houses for themselves.

WITH THE A. A. AT AVIGNON.

(NOTES FROM OUR CORRESPONDENT.)

Avignon.

On Sunday, September 8, the members of the Architectural Association Excursion again took the opportunity of seeing the town of Avignon, and they were not disappointed. As it was Sunday and glorious weather, the population was mostly in the open air, and the animated, expressive features of the people, combined with the views of churches to be seen in narrow side streets and the unexpected vistas of sunlight and shadow silhouetted against the cloudless blue sky made a scene not readily to be forgotten. The women, one noticed, were generally dressed in excellent taste. After the Austrian bentwood atrocities to be seen in most English tea-shops, the café chairs favoured at Avignon are particularly pleasing; they are made of a cane framework, the backs and seats of which are interlaced with brightly enamelled split cane arranged to form different designs. As each café adopts a different colour for its chairs, these add considerably to the general air of brightness about the town, and one wonders whether the "Brighter London" enthusiasts could not find a better outlet for their energies in such small but everyday things as this rather than in glaring illuminated sky-signs, which seem to be accepted in many quarters as the best means by which London can be "brightened."

In the afternoon the party visited the local museum, into which one is almost unwittingly enticed by the wonderful display of pink and white oleanders in the courtyard.

Monday.

On Monday morning the party left Avignon for Arles, a journey of some twenty-five miles through long avenues of fine plane trees, olive groves, and vineyards. The peasants, in their blue smocks and trousers, gathering the grapes, the quaint mule-carts, the mules with their (to us) odd harness and jingling bells, were all objects of interest. The sight of these peasants working in the fields brought to the memory Millet's picture, "The Angelus Bell," and the works of the brothers Maris, and made one realise the sincerity and truthfulness of their work. On arrival at Arles, which is within 20 miles of the Mediterranean, many fine relics were to be seen. Amongst those visited was the Amphitheatre, one of the longest of the kind in France; it is about 500 yards in circumference; the longer axis is 150 yards, and the shorter 117 yards. This arena probably dates from the first or second century of our era. It possesses five corridors and 43 tiers of seats, holding 26,000 spectators. Of the two stories of 60 arches, the lower are Doric and the upper Corinthian. The Roman Theatre was also visited, and this also proved to be of great interest. This theatre is said to have been begun under Augustus, though it was not finished until the third century. Its destruction began in the fifth century, and much of the material was used in the construction of several churches. In front of the stage wall was a colonnade of which two columns remain standing, one of Affricano and the other of Carrara marble. The theatre was richly decorated, and numerout works of art found there are preserved in the Museum. The Venus of Arles, in the Louvre at Paris, was discovered here in 1651. Beyond the Theatre is a public garden.

The ancient Cathedral of St. Trophisme, which was also visited, is considered to have been erected on the ruins of the Roman prætorium and consecrated in 606. It has been several times rebuilt, and the choir was added in 1430, while the whole church was restored in the nineteenth century; it is in the Romanesque style, with a tower over the crossing. The portal is of the twelfth century and is supported by six columns (see illustration). A flight of steps to the right of the choir leads to the cloisters, of which our illustration will give an impression.

Two museums were also visited, and the Monastery of Mont Majeure on the homeward journey. Lunch was partaken of at the Hotel du Nord, in the Place du Forum, where a fragment of the Forum may be seen.

Tuesday.

In brilliant weather a start was made on Tuesday from the hotel, through magnificent scenery, the golden-foliaged avenues of plane trees and hedges of bamboo making an impression not easily to be forgotten, to Pont du Gard, where a stop was made to enable the party to examine, sketch, or photograph the vast Roman aqueduct. Many of the party, including some of the ladies, ascended and walked at a great height across the top. This great aqueduct, spanning the Gard or Gardon at a bend of the valley, is one of the most imposing monuments of the Romans which remain with us to-day. It forms a part of the aqueduct built to convey to Nimes the waters of two springs in the neighbourhood of Uzès, and is ascribed to Agrippa, son-in-law of Augustus (19 B.C.). The bridge is 880 ft. long and 160 ft. high, and is composed of three tiers, each less wide than the one below (see illustration). The whole is wonderfully constructed of large stones and no cement has been used except for the canal at the top.

After lunch the party started for Uzès, and a halt was made to view the Château d'Argilliers. It is sad to see the neglected state of the house (which is uninhabited) and grounds. At the entrance is a circular dovecote (see illustration), which stands amidst magnificent plane trees and presents a charming picture in golden hues. The château, pleasing in character, is of a late period. The property is in the market; the price asked was between two and three thousand pounds, including wine presses and electric fittings.

On continuing the journey the party arrived at the ancient town of Uzès. The cathedral (17th-18th century) retains its campanile (twelfth century), an imposing Romanesque relic of an earlier church destroyed in 1611. The Hotel de Ville, a building of the eighteenth century, was also visited; it has a fine courtyard, beyond

The Cathedral of St. Trophisme, Arles: The Cloisters.

which stands the ducal palace, dating from the eleventh, thirteenth, fourteenth, and sixteenth centuries, but it was largely restored in the nineteenth century. After a ramble through the old town the party left for Avignon, a halt being made to view another ancient monastery.

The roads were dusty, and little traffic was met beyond a few motor-cars and the quaint mule-carts.

Wednesday.

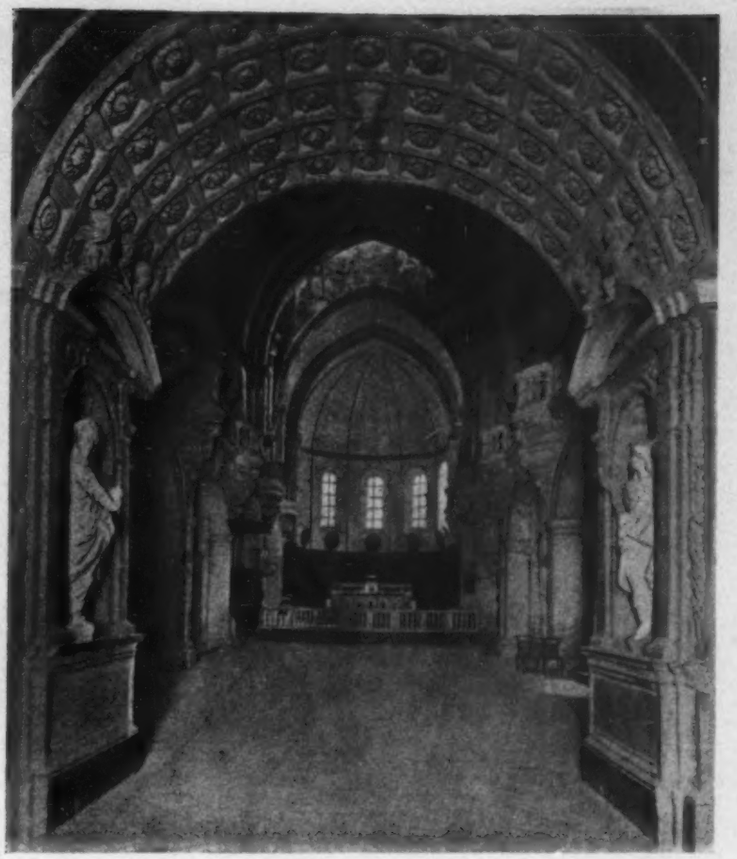
This was another brilliant day. The party visited Nîmes, which was reached after a short halt at the village of Rochfort, through a winding ascent amongst the houses and their gardens, with figs and pomegranates growing freely. A curious method of drying the figs was noticed; they are impaled on a branch of a thorny tree and placed in the sun to dry. Continuing the journey, Nîmes was reached, when lunch was partaken of at one of the numerous café restaurants at a cost of 9 frcs. (about 2s. 6d.). During the afternoon the Amphitheatre was visited; it forms an ellipse 145 yds. long by 111 yds. wide, and 69 ft. in height. It is smaller than the Amphitheatre at Arles, but the exterior is in better preservation. It is constructed of stones 6-10 ft. cube, all perfectly adjusted without mortar, like all Roman buildings of a large size. The exterior presents two stories, each of 60 arches, the lower having huge square buttresses, the upper Doric columns, while above this are 120 projecting stones pierced with holes in which the masts of the awning, which covered the amphitheatre, were inserted. There were four external gateways at the extremities of the axes; 24,000 spectators could be accommodated; 124 entrances afforded a rapid means of ingress for this multitude. Combats with wild beasts, it is thought, could not have taken place here as the wall bounding the arena was too low. The construction dates from the first and second centuries of our era. It was transformed into a fortress in the Middle Ages, and afterwards occupied by hovels, of which it was not freed until 1809. A restoration was begun in 1809 and another in 1899. The work is undertaken by the French Government and is well done. Bull fights still take place there.

The Maison Carrée was one of the principal buildings viewed. It is one of the finest and best preserved Roman temples known, and forms a parallelogram 76 ft. long by 40 ft. wide and 40 ft. high, with 13 Corinthian columns, 20 of which are attached to the walls of the cella. It is thus a pseudo-peripteral temple, prostyle and hexastyle, *i.e.*, it has a portico on the front only, consisting of six columns. It is approached by 15 steps. The columns are fluted and surmounted by a capital of superb workmanship. The entablature is very rich and, like the design, in exquisite taste. It is believed to date back to the time of the Antonines, *i.e.*, to the second century. Successively used as a church, municipal building, a warehouse, and a stable, this magnificent building has been well restored since 1824. It is now used as a museum and contains some fine objects of art.

The Jardin de la Fontaine, decorated in eighteenth-century style, but in part laid out on ancient foundations, was next visited. The Temple of Diana is to the left of the fountain. Other buildings were inspected, and after a pleasant and highly interesting day the return journey was made.

Thursday.

On Thursday the quiet old town of Tarascon was visited, the journey taking the party through interesting old villages, with many quaint objects *en route*. Tarascon is on the left bank of the Rhone opposite Beaucaire, and is said to derive its name from a monster called Tarasque, who ravaged the country in the first century and from whom it was delivered by St. Martha; a fête is occasionally held in commemoration of this event. The buildings inspected included the Church of St. Martha, which was founded in the twelfth century and rebuilt in the fourteenth-fifteenth century. This church has a fine Romanesque south portal, and contains many paintings attributed to Vien, Parrocel, and Vanloo, etc. In the crypt is the tomb of St. Martha, which has been restored. The Gothic Castle is of the fourteenth and fifteenth centuries, and is a remarkable pile with an interesting interior; King René of Anjou, Count of Provence, completed the building, which is now used as a prison, and resided there. From the Castle the journey was continued to Beaucaire, and the various objects of interest inspected, after which the party returned to Avignon.



Avignon Cathedral: Interior.

Friday.

The last of the official trips took place on Friday, and was arranged by Mr. Yerbury (Secretary). The route was again through numberless vineyards, with the black grapes hanging in clusters behind the bamboo hedges which are used to protect the vines from the cold winds. The first stop was St. Remy, where one of the objects of interest is the Triumphal Arch, which, though not large and with but one arch, is excellently proportioned, and still shows remains of fine ornamentation and sculptures representing captives; it dates from the first or second century. A mausoleum, called the tomb of Julii, from the inscription on the architrave, is close by. Pyramidal in form, it is nearly 60 ft. high, and consists of three stories with a square base, with bas-reliefs on one side representing hunting scenes, and battles on the other three sides. Above this is an arrangement of porticos and fluted columns, finishing with a small round temple, with ten fluted columns, on which are two draped statues. The details in general are good, but the proportion of the structure is unfortunate.

Within a short distance is the Cloister of St. Paul, which well repaid a visit. The courtyard within contains finely-foliated trees and flowers, presenting a peaceful sight.

Continuing the journey up mountainous and twisting roads, the mountain vegetation presented glorious harmonies in grey greens, browns, and golden hues. Huge stones are placed on the roadside to prevent vehicles falling into the ravines.

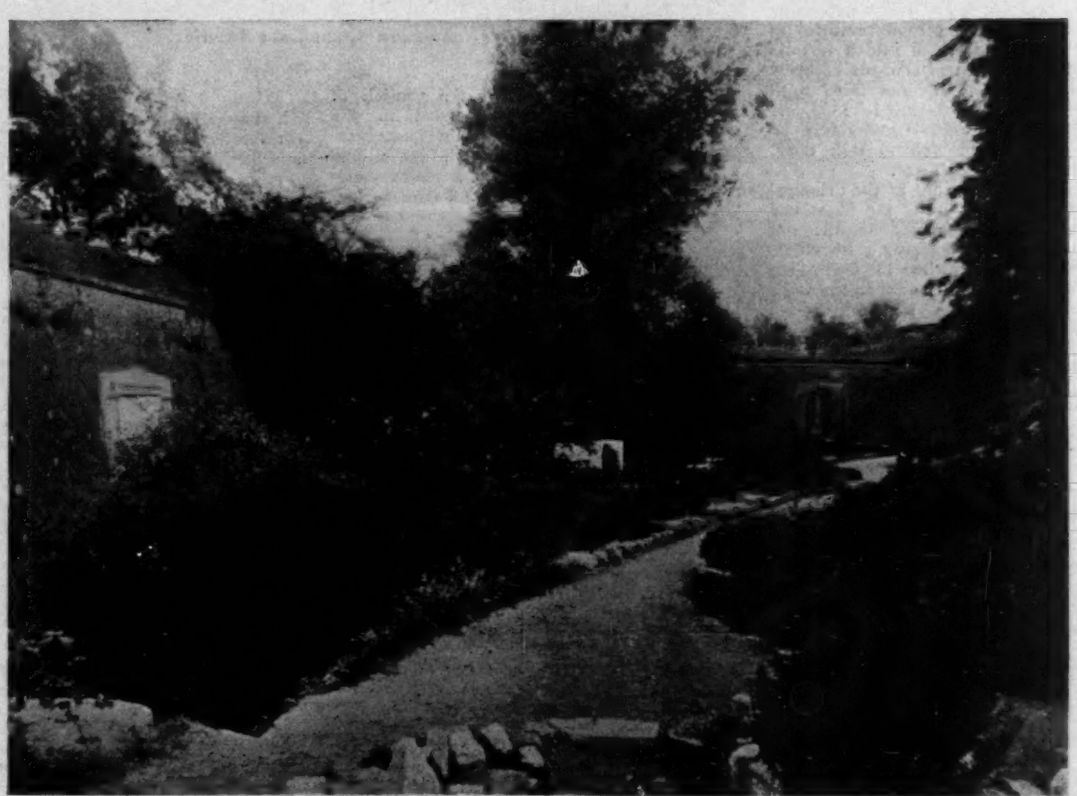
Lesbaux, an ancient but decayed fortress, contains many picturesque and remarkable objects. It surmounts the top of a rocky height not far from where the Alpines begin to rise from the plain of the Rhone. Formerly a considerable fortified fortress, it is now a deserted but romantic spot. A few inhabitants till the soil in the valleys, where olive trees abound and wild pigs thrive amongst the ruins. Although little more than a gigantic heap of ruins, some façades of good Renaissance design are still to be seen in the silent streets. The interest here is inexhaustible, and one ponders over the ruins in sheer amazement.

Sunday.

Sunday brought the excursion to an end, and a last look round was indulged in. Endless quaint courtyards, squares, and interesting old doorways were discovered; and last photographs taken of the picturesque subjects full of colour, sometimes brought about by a line of washing hanging from the window or a seated figure in some bright garment in the sunlight or shadow. So ends a pleasant and an instructive holiday, new to many and none the less pleasant to the old travellers.

The thanks of the excursionists are due to Mr. Yerbury for the choice of Avignon as a centre, and the able arrangements made for the comfort of all, everything passing off satisfactorily.

THE SCULPTURE AND TERRACE.



[View of the garden looking towards the causeway side of the arch cut in the old wall, showing the monument set in the wall close to the spot where the scaling ladder was placed. The balustraded terrace forms the view point about 40 ft. distant across the moat. Both the garden and moat are planted with New Zealand flora. In the foreground is the entrance to a communicating tunnel converted into a rockery and on the left is the edge of the dam on which the ladder rested.]

Le Quesnoy Memorial. MR. S. HURST SEAGER, F.R.I.B.A., Architect. (*See p.* 441.)

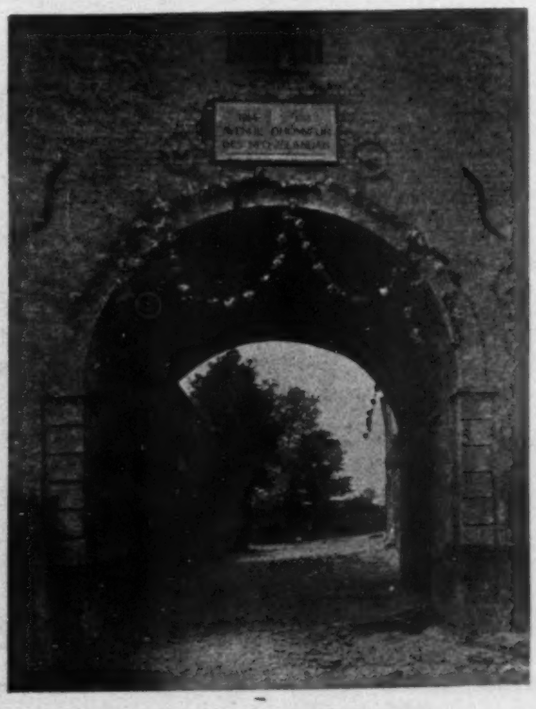
LE QUESNOY MEMORIAL.

THE choice of Le Quesnoy as the site for one of the New Zealand battle memorials provided the architect, Mr. S. Hurst Seager, with an opportunity of demonstrating the effectiveness of the right combination of floral beauty and monumental sculpture. It happened that on November 4, 1918, the 4th and the 2nd Battalions of the New Zealand Rifle Brigade were assigned the task of taking this walled town of Northern France. The New Zealanders were held off by machine-guns for the greater part of the day, but eventually, under cover of a barrage of Stokes mortars, rifle grenades, and Lewis gun fire, the 4th Battalion were able to place a scaling ladder against the high ramparts and mount successfully to the parapet. The incident was the only one of its kind during the whole four years of war, and it was decided to incorporate a representation of it in the monument. But as the taking of Le Quesnoy, with its 800 German defenders, marked the closing action of a long series of triumphs which extended over eight months, and also the end of the war for the New Zealand Division, it was decided that the memorial should not only be in honour of those who had fallen in the adjacent battlefields, but a fitting emblem of victorious peace.

There are other walled towns in France, but none so picturesque as Le Quesnoy. The inner and outer ramparts, with their projecting salients, and the detached island bastions form a veritable labyrinth, and the moats, now overgrown with weeds and rushes and water-lilies and great timber trees, seem to lose their way between the towering battlements. The ancient brick walls themselves are beautiful. Here they are silver-grey, merging into red and brown, and again darkening into purple, and ever varying with the position of the sun. The parapets of the walls and the island bastions are thickly wooded, and still beyond the fortifications there is a wooded area which has been largely left to Nature.

The possibilities of an effective memorial were immediately evident to Mr. Hurst Seager. He decided that it should take the form of a marble plaque set in the face of the battlement near to where the scaling ladder was originally set up. Just in front of this point is one of the island bastions, and he conceived the idea of making this a garden from which the plaque could be viewed. So far this was satisfactory, but having decided that the memorial should be outside the walls of the city, there was the question of accessibility. In the Place d'Armes in the centre of the town there stands an archway which gives access to a ruined château, once the home of Queen Marguerite of Bourgoyne. Passing by the château one comes to an avenue of trees which runs along the inner side of one of the battlements, and so on to a projecting salient. The salient itself overlooks the island bastion, which has now been transformed into the New Zealand garden. Here was the solution of the problem. With the approval of the town authorities a pathway was laid beneath this avenue of trees, an archway was made in the wall of the salient, and a causeway built across the moat to the island. The pathway along the battlements has been named by the French "Avenue d'Honneur Neo-Zelandais," and over the château arch is a plate with that name engraved thereon.

Every 10 ft. throughout the whole length of the fortifications there is a projecting buttress on the inner side—not visible because the grass slopes mount upward to the top of the walls. But a cutting was made, and two of these buttresses disclosed. Between these is the new archway. Such new brickwork as was necessary was made to conform as much as possible to the picturesqueness of the ancient masonry, and by treating all the bricks with certain chemicals an appearance of uniformity of age has been acquired. Over the top of the archway is a tablet bearing the inscription "Le Jardin des Souvenirs."



Entrance to the Avenue d'Honneur.

All the earth taken from the cutting has been utilised to form the causeway across the moat to the island site, and the sides of both the causeway and the cutting have been turfed. The island was already a beautiful spot, but for a year or more the staff of the Imperial War Graves Commission have been converting it into an ordered garden, though much of the original vegetation was left. This and the flowering shrubs and rock plants merge pleasantly into one another. To the New Zealander no sight could be more welcome than the veronicas, the olearias, the red manukas, and other plants from his far-off home. Down in the moat beside the clear rippling stream the New Zealand flax and toi-tois are flourishing as well as if they were growing on their native hills. Over all are the stately poplars, the elms, and pines.

A simple marble balustrade overlooks the memorial plaque 40 ft. across the moat. Just a few yards to the left of the plaque is the place where the scaling ladder was set on that eventful day in November of 1918. On the inner side of the balustrade wall are the words, "From the uttermost ends of the earth," and in French, "De l'autre extremite du monde." From this vantage point one may look directly upon the monument.

One's only regret is that so few people whose interest in it is greatest will ever see it. Mr. Seager's idea was to include in the sculpture the wall-scaling incident, but this was overshadowed by the greater idea of triumphant Peace. The war scene was modelled by Mr. A. R. Fraser, a New Zealand sculptor, whose work has appeared in the Royal Academy on several occasions. Mons. Felix Desruelles, a French artist of note, undertook the work in marble. He has reproduced exactly Mr. Fraser's scene, but the figure of Peace carved on the more prominent plane of the marble block is his own conception. At no time is the light in the eye of the spectator. At midday the sun casts deep shadows on the statue, and in the evening the rose of the sunset gives still greater life to the marble figure of Peace.

It is necessary to spend some time alone in this Garden of Memories to appreciate to the full its beauty and its peacefulness. On a summer evening no place could be pleasanter. With its convenient and beautiful approach it will always be the natural goal of those who seek a few moments of peace and quietness. Here, indeed, have Nature and Art combined to make a thing of surpassing beauty.

T. J. PEMBERTON.

LEADING CONTENTS.

	PAGE
THE BRITISH INSTITUTE OF INDUSTRIAL ART	433
NOTES	434
GENERAL NEWS & COMPETITION NEWS	436
CORRESPONDENCE	437
WITH THE A.A. AT AVIGNON	438
LE QUESNOY MEMORIAL	441
THE DOME: ITS HISTORY AND CONSTRUCTION.—IV	448
EXHIBITION NOTES	451
A HAPPY FAMILY	452
DEESIDE REGIONAL PLANNING	453
BOOK REVIEWS	454
THE ROAD PROBLEM	456
SANITARY SURVEYS	457
THE BUILDING TRADE	461
DESIGN AND LAY-OUT OF MOTOR GARAGES	462
CONTRACTS, COMPETITIONS, &C.	464
PROPOSED NEW BUILDINGS	467
PATENTS, TRADE NEWS, TENDERS	471

ILLUSTRATIONS.

Bishop Tucker Memorial College.

The illustration of the Bishop Tucker Memorial College, Mukono, Uganda, is from the design of Professor Beresford Pite, F.R.I.B.A. Our illustrations are from this year's Royal Academy Exhibition.

Pavilion at Prestatyn, North Wales.

This pavilion has been designed as part of a scheme now complete, which includes a bathing pool, arcades and bathing cabins, and it faces the pool across a paved courtyard. Large French windows give access to this from the hall, 70 ft. by 40 ft., which is used for entertainments and dancing, and as a café. The accommodation includes a platform with dressing-room accommodation, kitchen and services, and male and female lavatories.

The walls are limewashed externally and the roof covered with grey-green slates, while internally the finish is distemper on brick covered by treillage. The open roof exposes the built-up roof trusses, which, with the treillage, are decorated in a colour scheme of blue, green, orange, and black; the whole effect aimed at was one of simplicity with the gaiety suitable to such a building.

The general contractors were Messrs. Roberts & Sloss, of Liverpool and Prestatyn. The roof trusses were supplied by Messrs. Freeman & Co.; treillage by Messrs. J. P. White & Co.; artificial stone by the Croft Concrete Co.; slates by Roberts, Adlard & Co.; ironmongery by Robert Adams & Co.

The architects are Messrs. Easton & Robertson, of 7, Gray's Inn-place, Gray's Inn, W.C.1.

White's, Christ's Hospital, Horsham.

This new master's house is named after Mr. F. A. White, J.P., the late treasurer and a generous benefactor, and is situated on the south side of the Western avenue. It represents an attempt to obtain by simple planning and construction a house of enduring material at a reasonable first cost, and which involves practically no outlay for maintenance. The walls are formed with two 4½ in. thicknesses of brickwork, with a 1 in. cavity filled with White's hygeian rock composition. By carrying this composition under the surface concrete the house becomes a completely watertight and insulated tank. The roof is covered with Collier's hand-made tiles, and the walls have Daneshill facings with Weldon stone dressings.

Mr. George Alexander carved the heraldic panel on the door. The metal casements and lead lights are by Messrs. Welstead, of Croydon. The oak doors have wrought-iron strap hinges and furniture by Messrs. F. G. & S. H. Frost, metal craftsmen. The sanitary and domestic plumbing and drainage work is by Messrs. Durbin & Katesmark. The general contractors are Messrs. Walter Lawrence & Son, and the architect is Mr. Sydney Tatchell, F.R.I.B.A., the Surveyor to Christ's Hospital.

Proposed House at North Foreland, Kent.

The ground plan is "L" shaped. The hall is entered from the north end from an inside porch and outside portico. The hall extends practically the full width of the house. On the right of the entrance are cloakrooms, with lavatory accommodation, etc. The principal stairs occupy the opposite end of the hall. On the left of the hall from the entrance and facing the sea is a spacious central loggia, with dining and sitting rooms on either side, each having large square angle bays, with windows on three sides. The loggia and dining-room may, by means of a folding partition, be converted into one room, 40 ft. by 18 ft., irrespective of the angle bays. The loggia gives on to a verandah extending across the entire sea frontage (60 ft.) on the ground floor, and has a flat roof, forming a balcony, upon which the principal first-floor bedrooms give.

The elevations are to be in brickwork, ashlar stuccoed, and to be painted white. The roof is to be covered with red Marseilles tiles. The design is of the simplest, but the colonnade of six Doric columns, with coupled Doric pilasters at either end, and the entablature and open balustrade to first-floor balcony have all the characteristics of the Riviera villa. This is accentuated by the doors and windows looking on to the verandah having circular arches.

The architect is Mr. C. F. Skipper, F.S.A., Lic.R.I.B.A., F.R.S.I., F.I.A., of 64, St. Andrews-street, Cambridge.

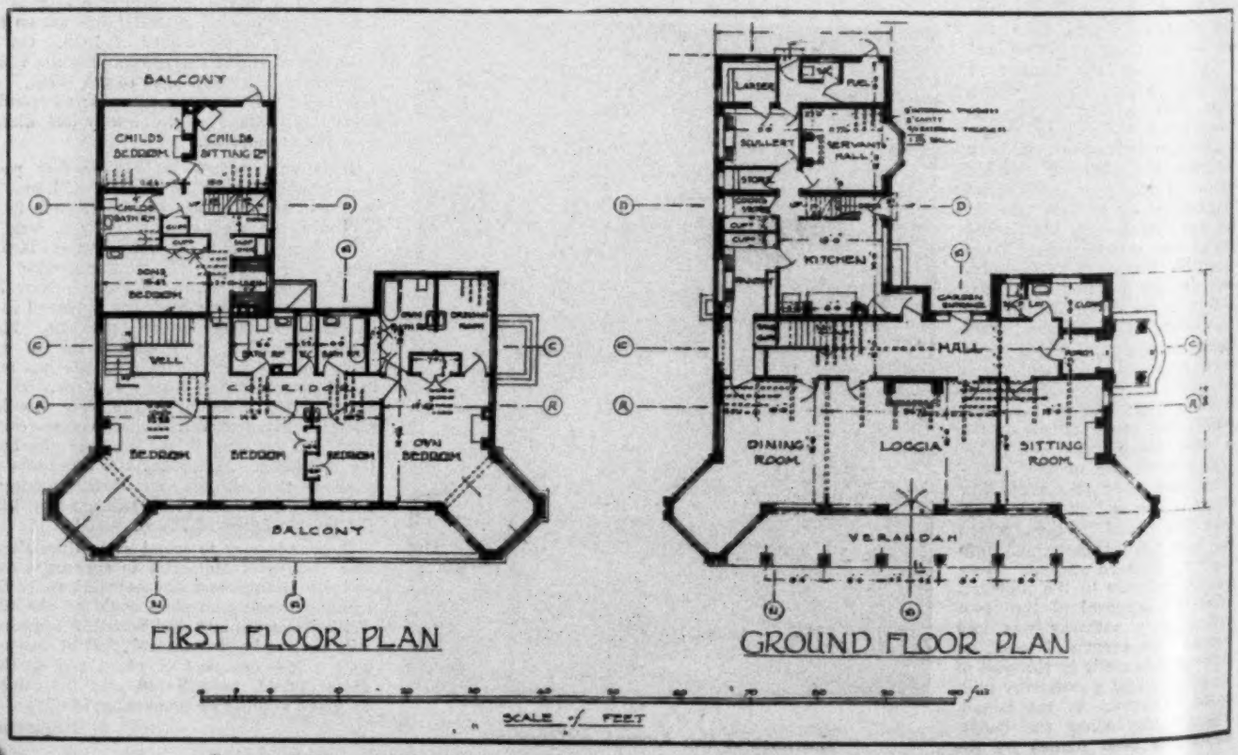
St. Augustine's Parsonage, Tooting Bec, Surrey.

This illustration—from a pencil drawing by the architect—is of a small parsonage house to be built upon a corner site, another portion of which is reserved for the permanent church of St. Augustine, Tooting, from the designs of Mr. H. P. Burke Downing, F.S.A., of Westminster. The estimate of the builders, Messrs. G. P. & H. Barnes, of Streatham, is £2,800.

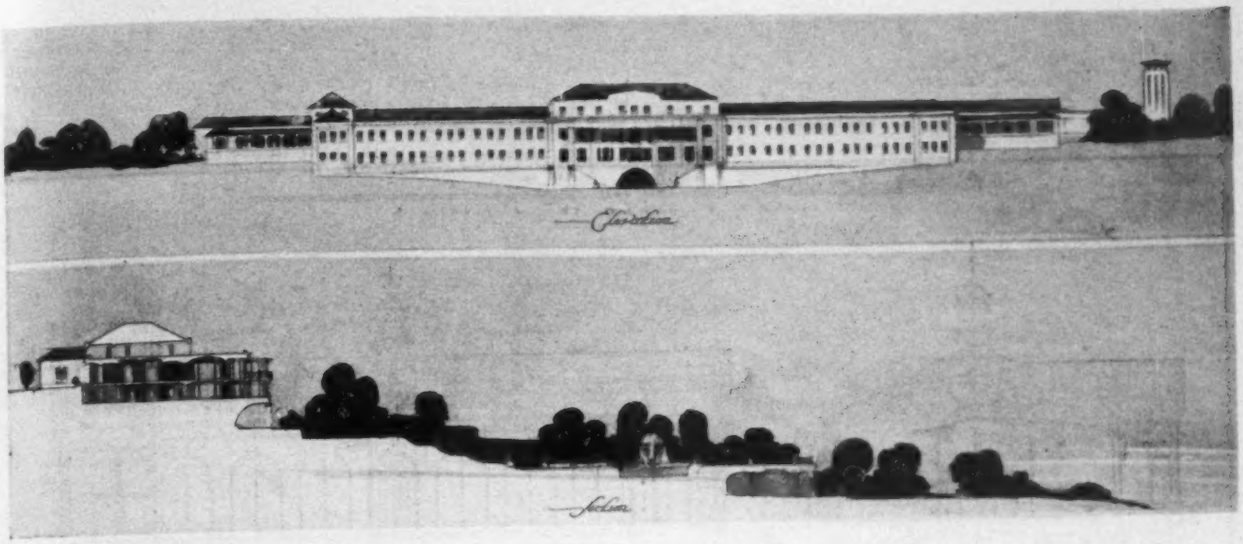
Church of St. Martin, Llay, Gresford.

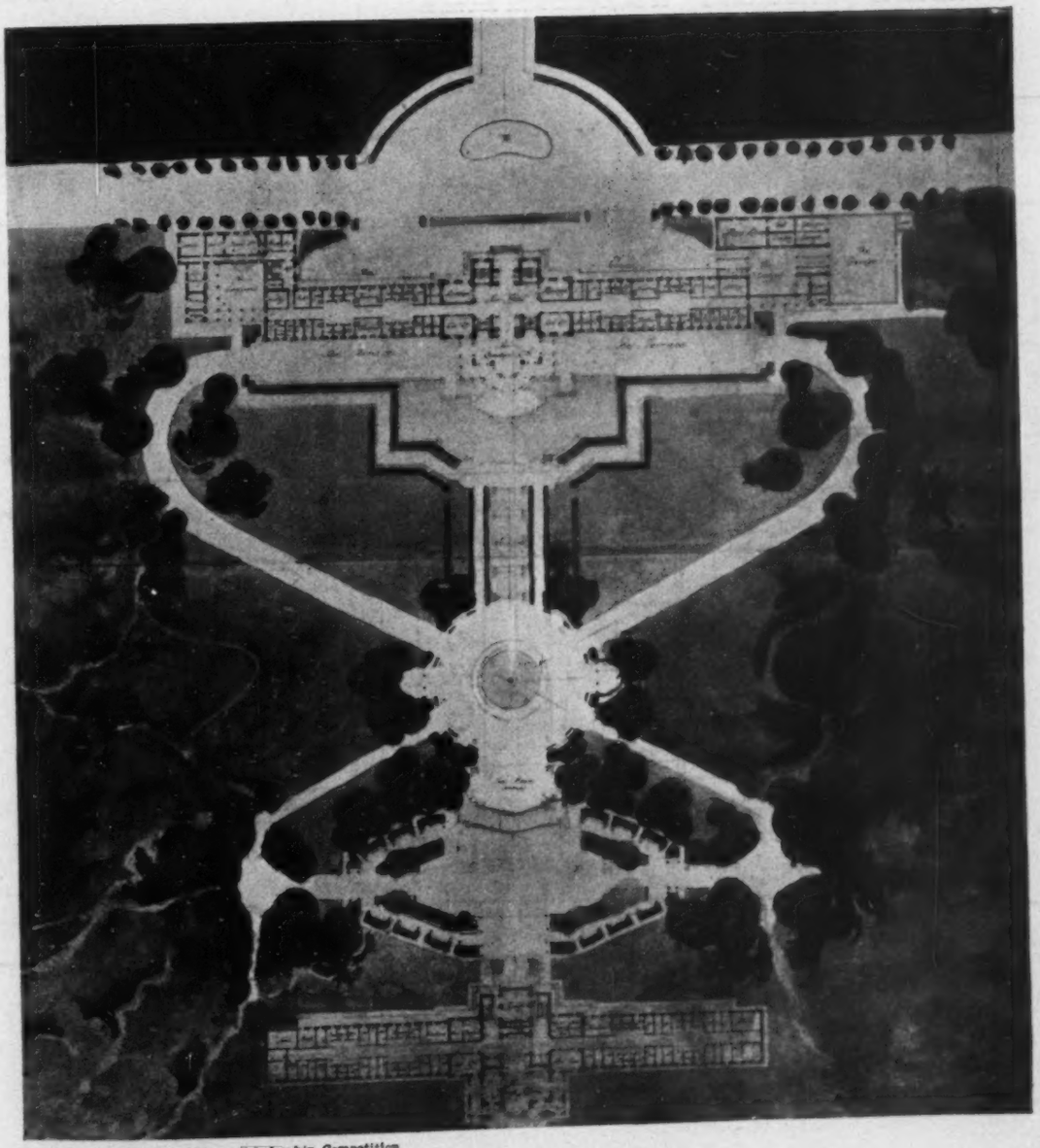
This church is to be built in a new garden village formed to house the employees of a large colliery. When completed it will accommodate 500 persons at a cost of about £9,000. The walls are to be faced inside and out with rough Llay Hall bricks 2½ in. thick, the window dressings being of Runcorn stone. The internal arcade is to be of timber. No contract has as yet been let, but it is hoped that a start will shortly be made with at least a portion of the church, and that it will be the first new church to be built in Wales since disestablishment.

Mr. R. T. Beckett, of Y Bryn, Tryddyn, near Mold, is the architect.



Proposed House at North Foreland, Kent. MR. CHARLES F. SKIPPER, F.S.A., Architect.

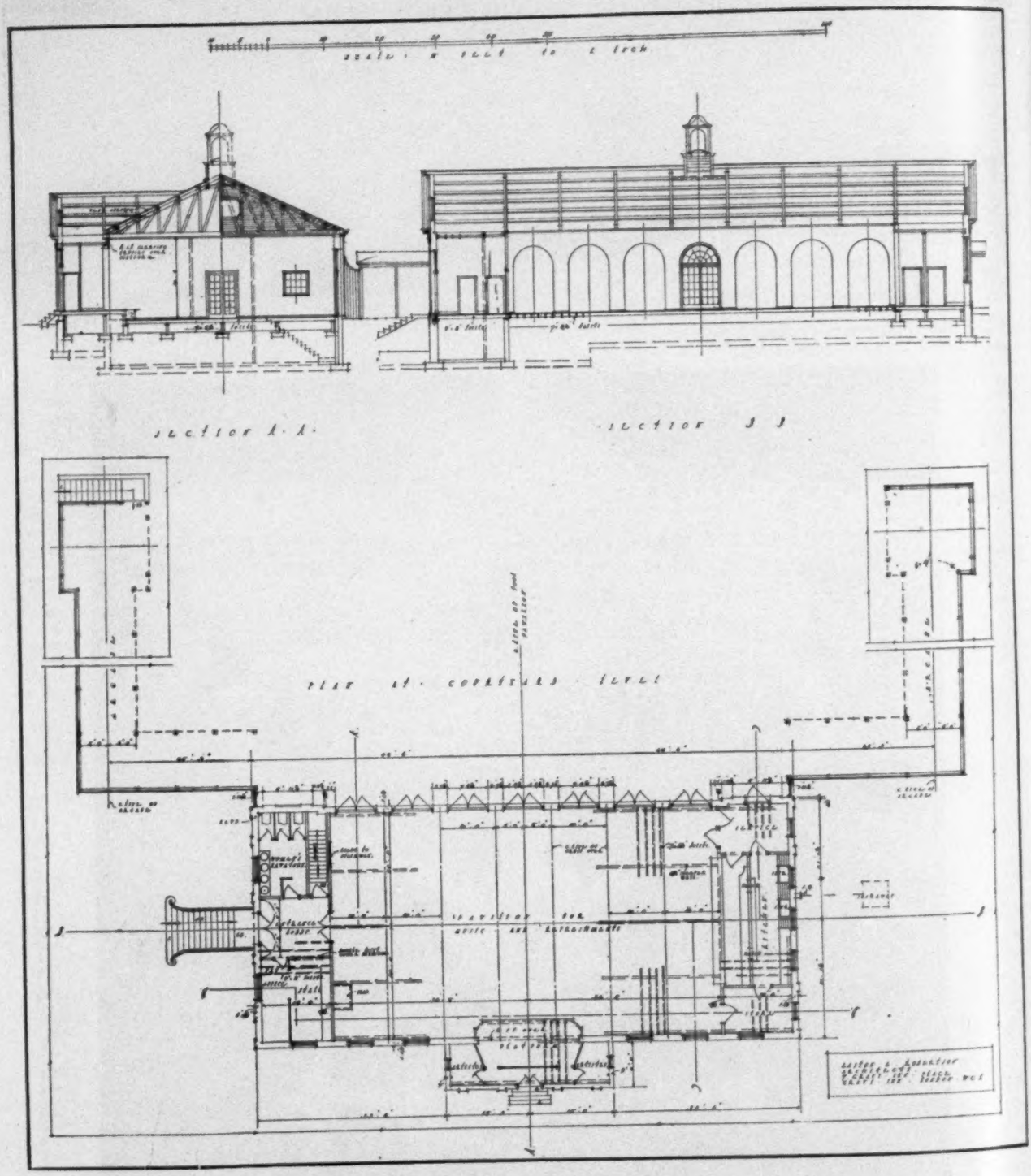




Society of Architects' Victory Scholarship Competition

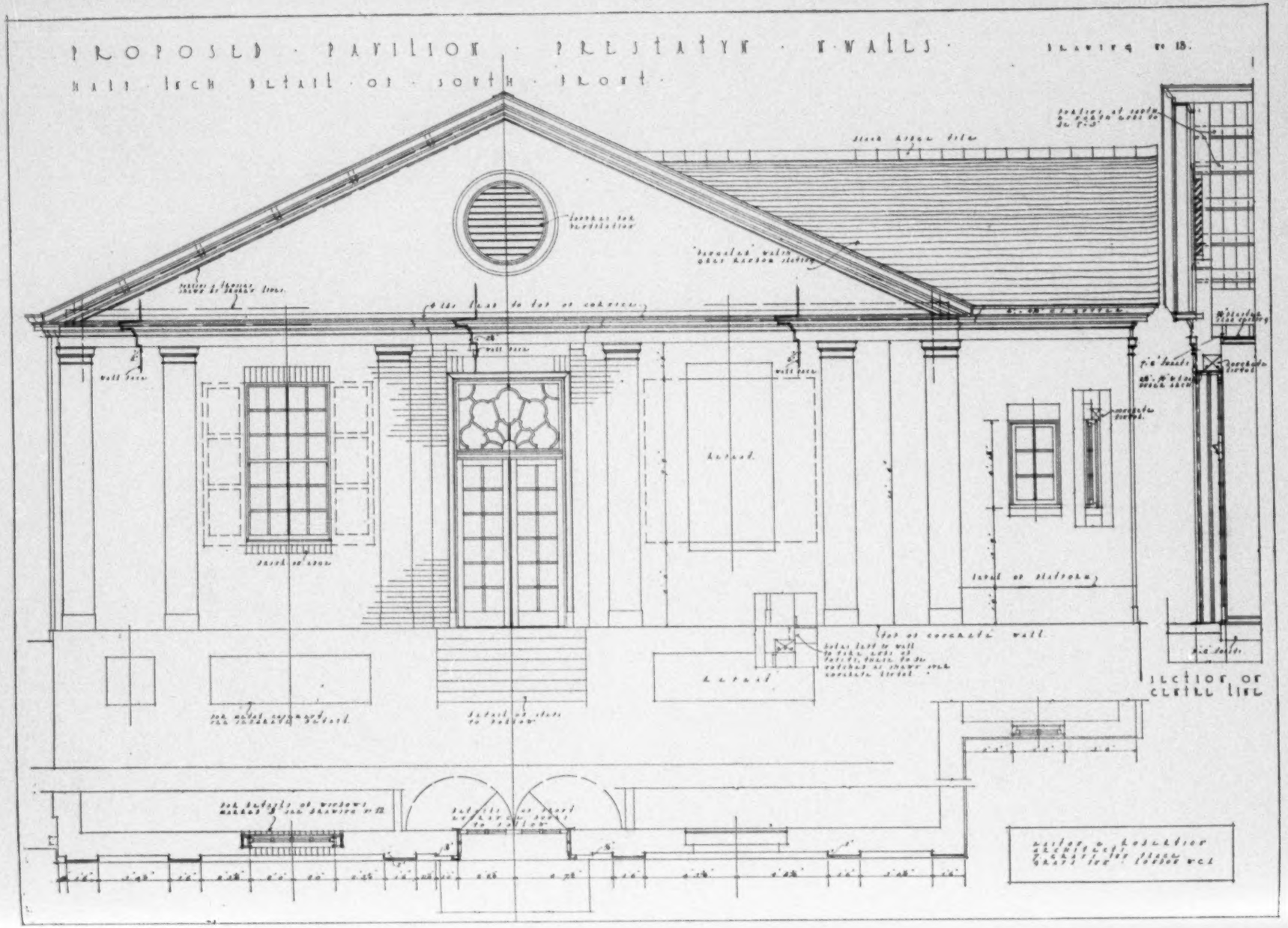
Design for a Hydropathic Establishment.

By MR. BRUCE MARTIN FLEGG. (Awarded £100 and Gold Medal.) (*See p.* 451).



Bathing Pool and Pavilion, Prestatyn.

MESSRS. EASTON & ROBERTSON, Architects. (*See p.* 442).



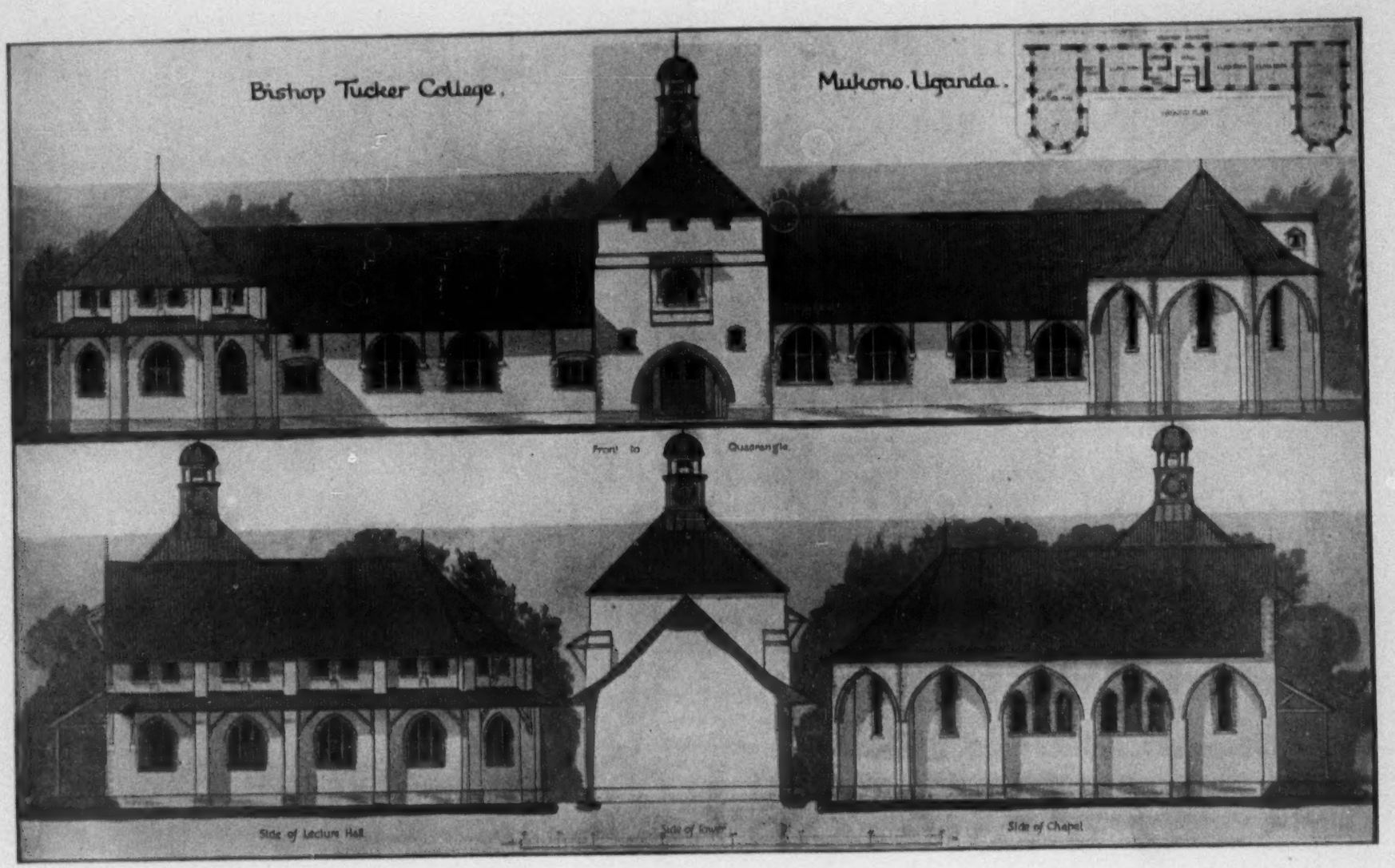
PAVILION, PRESTATYN. Messrs. Easton and Robertson, Architects.

PAVILION, PRESTATYN. Messrs. Easton and Robertson, Architects.

R.A. EXHIBITION, 1923.

PAVILION AND BATHING POOL.

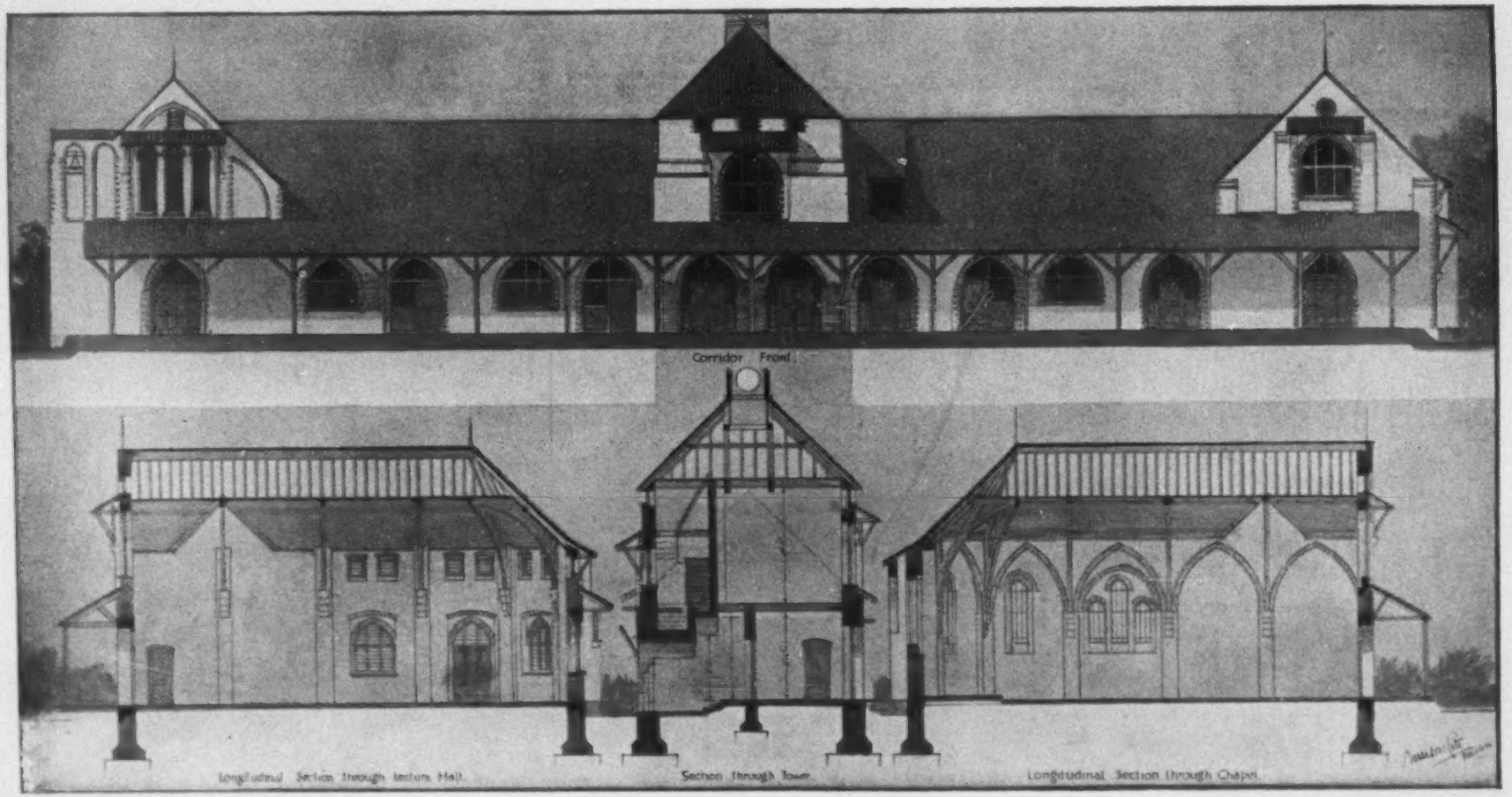
MESSRS. EASTON AND ROBERTSON, Architects.



R.A. EXHIBITION, 1923.

BISHOP TUCKER MEMORIAL COLLEGE, MUKONO, UGANDA.

PROFESSOR BERESFORD PITE, F.R.I.B.A., Architect.



R.A. EXHIBITION, 1923.

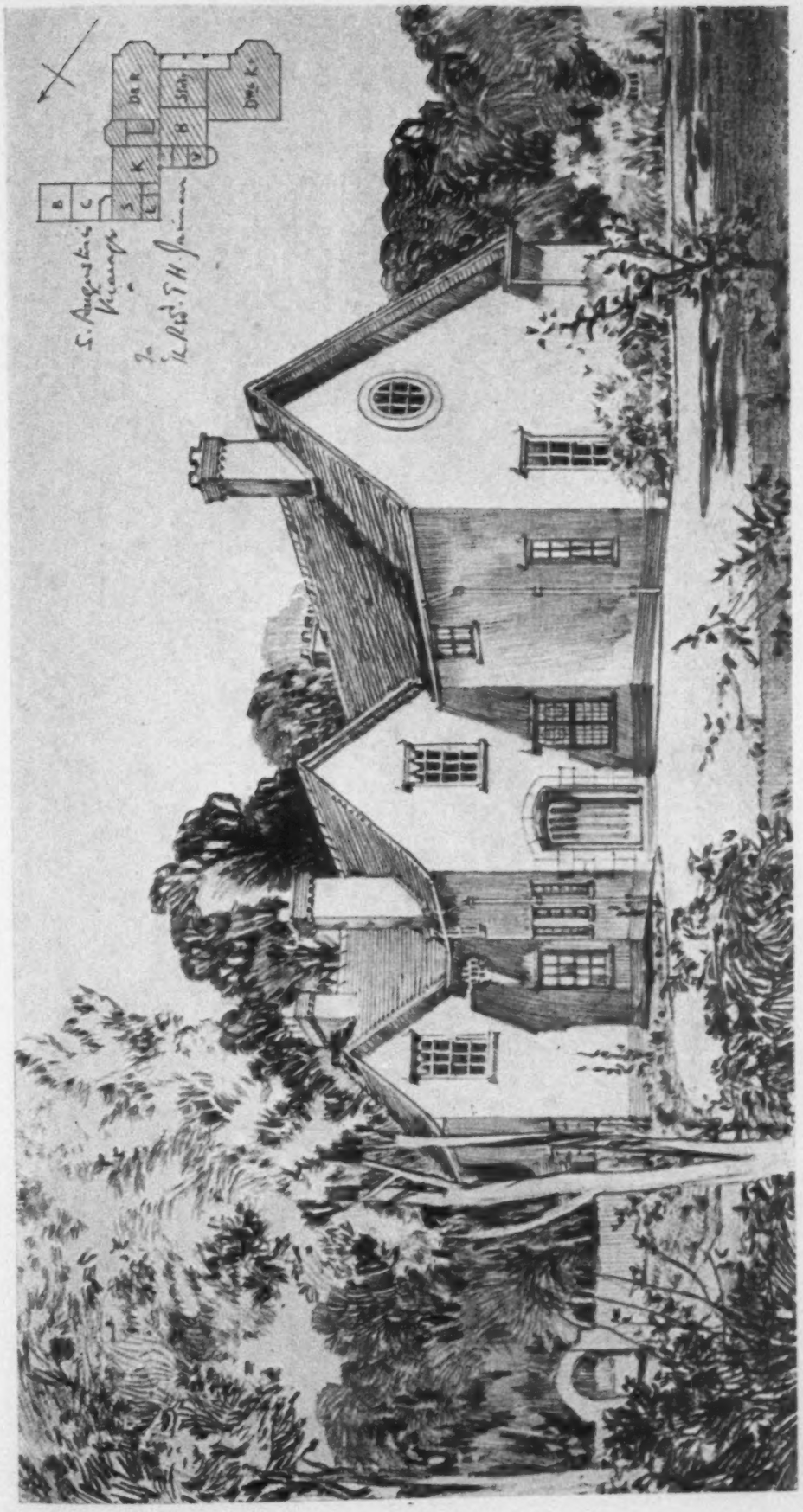
BISHOP TUCKER MEMORIAL COLLEGE, MUKONO, UGANDA.

PROFESSOR BERESFORD PITE, F.R.I.B.A., Architect.

R.A. EXHIBITION, 1923.

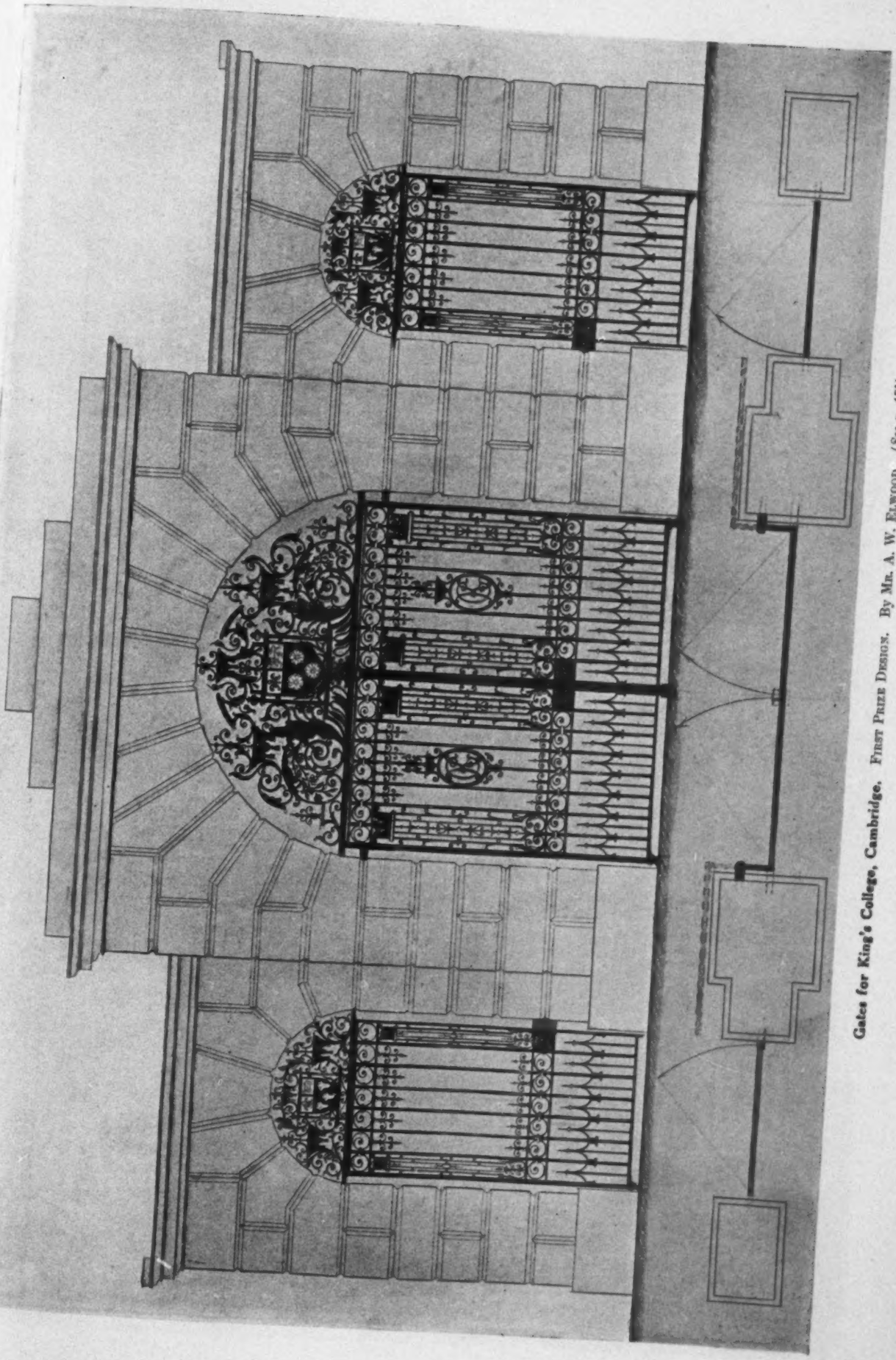
HOUSE, NORTH FORELAND, KENT.

MR. CHARLES F. SKIPPER, Architect. (The plans of this house are given on page 442.)

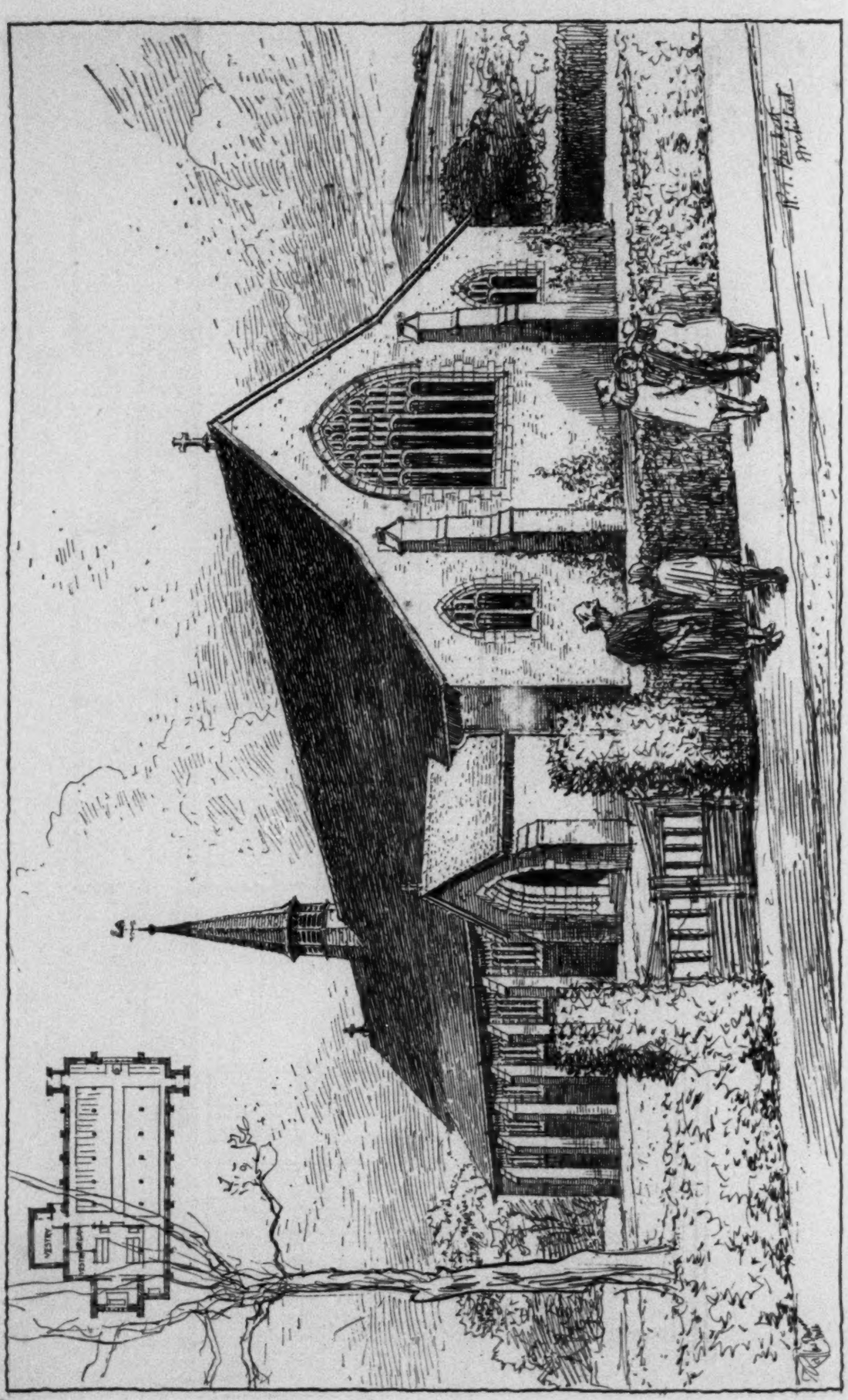


ST. AUGUSTINE'S VICARAGE, TOOTING BEC, SURREY.

Mr. H. P. Burke Downing, F.R.I.B.A., Architect.



Gates for King's College, Cambridge. FIRST PRIZE DESIGN. By MR. A. W. ELWOOD. (*See p.* 461).



Church of St. Martin, Llay, Gwaford. (*See p.* 442).

MR. R T. BECKETT, Architect.

MR. SYDNEY TATCHELL, F.R.I.B.A., Architect. (See p. 442).

THE DOME: ITS HISTORY AND CONSTRUCTION.—IV.

By SIDNEY TOY, F.S.A.

With the revival of Classic forms in Western Europe during the fifteenth century the building of domes received a fresh impulse. The dome over the crossing of the Cathedral of Florence, built 1420-61, is a masterpiece of scientific construction (Fig. 33). This dome springs from an octagonal drum, retains the octagonal form throughout, and rises rapidly on the curve of a pointed arch to an eye 19 ft. wide. The eye is not allowed to remain open, as at the Pantheon at Rome, but is covered by a lantern, an arrangement which was extensively followed in later Renaissance buildings. The base of the dome, to a height of about 10 ft. above the springing line, is composed of solid masonry, about 14 ft. thick. Above this the structure is divided into two shells by a space of 4 ft. for the first 15 ft., and of 6 ft. for the whole of the distance beyond; throughout this greater portion the inner shell is 6 ft. thick, and the outer 3 ft. at the base, diminishing to 2 ft. at the crown. The lower parts of the shells, to a height of about 40 ft. from the base, are built of masonry, while the remainder is of brick. These shells are connected by solid stone ribs, one at each angle of the octagon, 9 ft. thick at the bottom, diminishing to 2 ft. at the top, and two between the angles, about 5 ft. thick at the bottom and 1 ft. 7 in. at the top. The ribs extend through the full thickness of the dome, and are connected at intervals by cross arches, as in Fig. 34, which shows one face of the dome with the upper shell removed. Two stone galleries running round between the shells assist considerably in consolidating the structure, which is further secured by iron girdle chains, embedded in the masonry 14 ft. above the springing line, and a heavy chestnut girdle, strongly fished at the junctions, placed about 28 ft. above the springing line. In this dome an attempt is made to overcome the effect of lateral thrust within the perimeter of the dome itself, and that object is largely accomplished by giving the structure a beehive form and by the insertion of girdle ties at the levels where the thrusts are most severe.

The dome of St. Peter's, Rome, built during the latter half of the sixteenth century, is also surmounted by a lantern, and is composed of two brick shells connected by solid stone ribs (Figs. 35 and 36). The base of this dome is circular, and the shells are nearly hemi-spherical in form. The space between the shells is not of uniform width, as at Florence, but increases during the ascent from 2 ft. 6 in. to about 8 ft. Equally spaced round the dome are sixteen stone ribs, which extend across the space and through the full thickness of both shells, and have a thickness of about 9 ft. at the bottom, diminishing by offsets to 3 ft. at the top. There are no cross arches between the ribs,

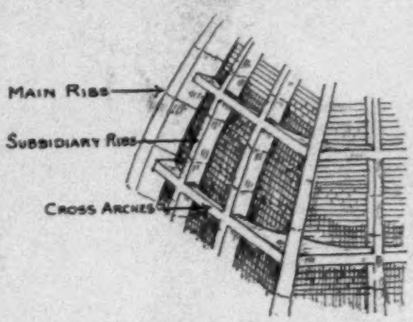


Fig. 34.

as at Florence. At the haunches, where the lateral thrust would be most severe, three iron chain girdles were embedded during the progress of the work. The lateral thrusts are here deflected vertically in the dome itself by the arrangement of the two shells, the upper shell having its axis raised considerably above that of the lower. The thrusts are also met by sixteen heavy buttresses, placed round the drum in positions corresponding to the great ribs of the dome (Fig. 36), and are restrained by the chain girdles mentioned above. That the design is defective and the precautions taken insufficient to secure the safety of the structure is evidenced by the fact that in 1742, about 150 years after its erection, very serious cracks were discovered to have developed in the dome, and six other chains, one at the base of the drum and five at various heights in the dome itself, were subsequently added to strengthen the work.

Fig. 36.—St. Peter's, Rome.

The architects of this later period, like those of the Middle Ages, endeavoured to solve the problem of securing both internal and external effect, and a development in this direction occurs in the largest of the two domes over the church of S. Maria della Salute, Venice, built 1631-56. Here the dome consists of two distinct parts, the lower shell

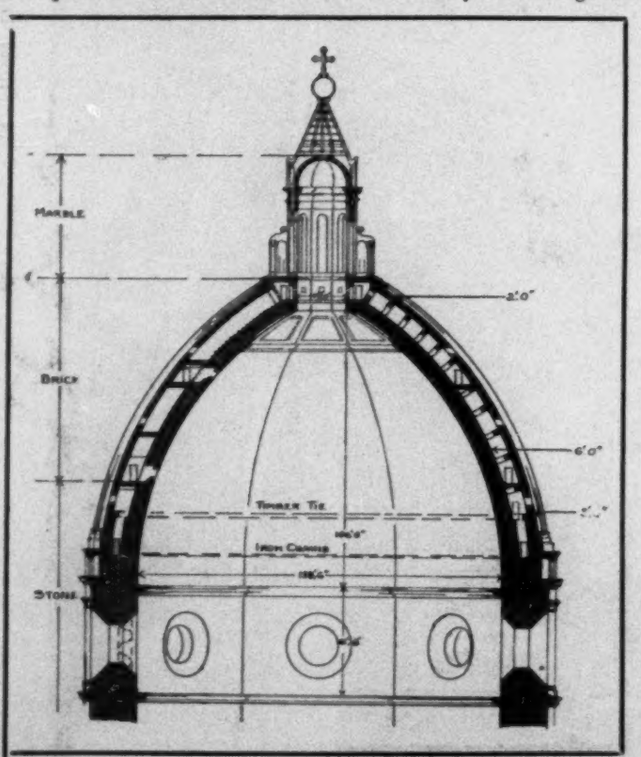


Fig. 33.—The Cathedral, Florence.

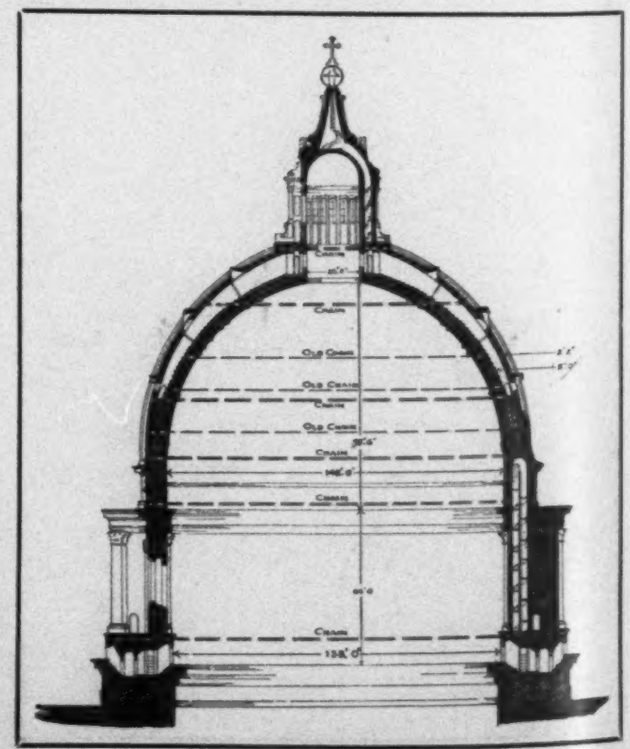


Fig. 35.—St. Peter's, Rome.

only, which is exposed to the church, being the structural member, while the upper part, seen only from the exterior, is built of timberwork. The outer cupola is raised considerably above the other, and thus, while the external appearance is greatly enhanced, effective protection is afforded to the dome proper.

The dome of St. Paul's Cathedral, London (Fig. 37), erected about 1700, is built on a tall cylindrical drum which inclines inwards as it rises, and is supported over an octagonal space on eight piers with round arches and pendentives. A peristyle, raised on a lofty plinth, encircles the drum, and is connected with it by thirty-two buttresses. This not only provides the vertical pressure requisite to correct the lateral thrust of the drum itself, but also adds considerable dignity to the external effect of the whole structure. From the top of the drum spring two shells, one, having a slightly elliptical form and an eye at the crown, being the cupola exposed to the interior, while the other is a conical structure rising from the haunches of the cupola and supporting a stone lantern at its apex. The crown of the cone, with its decorations, is thus seen from the interior of the church through the eye of the cupola. Both these shells are of brickwork, 1 ft. 6 in. thick, but they spring from a base of Portland stone, in which is embedded a strong double iron chain; and six bands of stone, each containing an iron chain, engirdle the cone at various intervals in its height. The base of the cone is connected with an attic wall, surmounting the drum, by thirty-two stone buttresses, about 2 ft. thick, and upon these buttresses and on stone corbels in the cone itself rests the timber framework of an external cupola, which is covered with oak boarding and lead. The cone is lighted by windows which pierce through its crown and the summit of the external cupola, and are so constructed as to

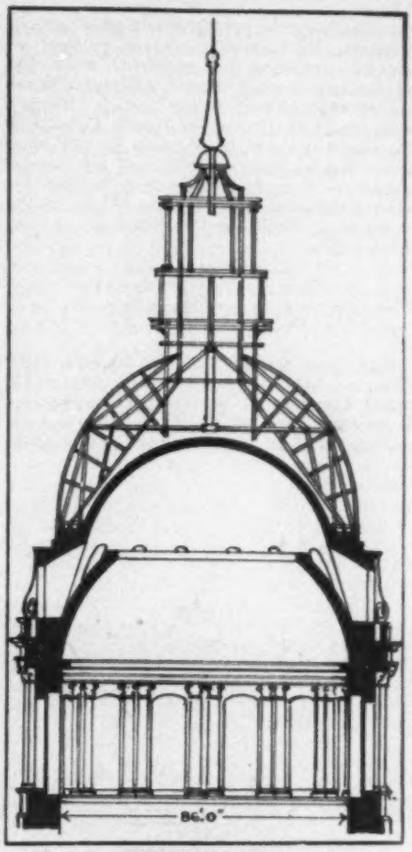


Fig 38.—Dôme des Invalides, Paris.

leave the contour of the cupola unbroken and to be obscured from observation from the street level. The space between the cone and the external cupola is lighted by elliptical holes in the cone.

The scientific manner in which the lateral thrusts are here received and deflected in a vertical direction by the use of the smallest amount of material places this dome among the most skilfully built structures in existence. The thrusts of the lower cupola are received at its haunches—where they are most severe—by the combined weight of the cone with the lantern it supports and of the external cupola, the latter resting on the cone and the cross buttresses at its base. The cone itself is rendered rigid by the chain ties engirdling it and by the weight of the external cupola on its outer surface. Tendency to spread at the haunches is further resisted by a strong double iron chain and by the buttresses surrounding the drum; while the drum itself, in order to receive the deflected but not quite vertical pressure, inclines inwards as it rises. The surrounding peristyle finally neutralises the lateral thrust.

The dome over the Dôme des Invalides, Paris, built in 1706, is composed of three distinct parts (Figs. 38 and 39). The lowest shell is entirely open at the crown, and simply forms a screen for the windows surrounding the drum of a secondary dome. The whole crown of the latter is thus exposed to the interior, and the paintings by which it is embellished are flooded with light by windows, themselves obscured. The third shell is of timberwork covered with lead. At the Pantheon, Paris, built 1775, the dome consists of three distinct shells, all built of stone. The lowest shell is exposed to the interior and has a large eye, through which the paintings on the intermediate shell can be seen, the paintings themselves being lighted

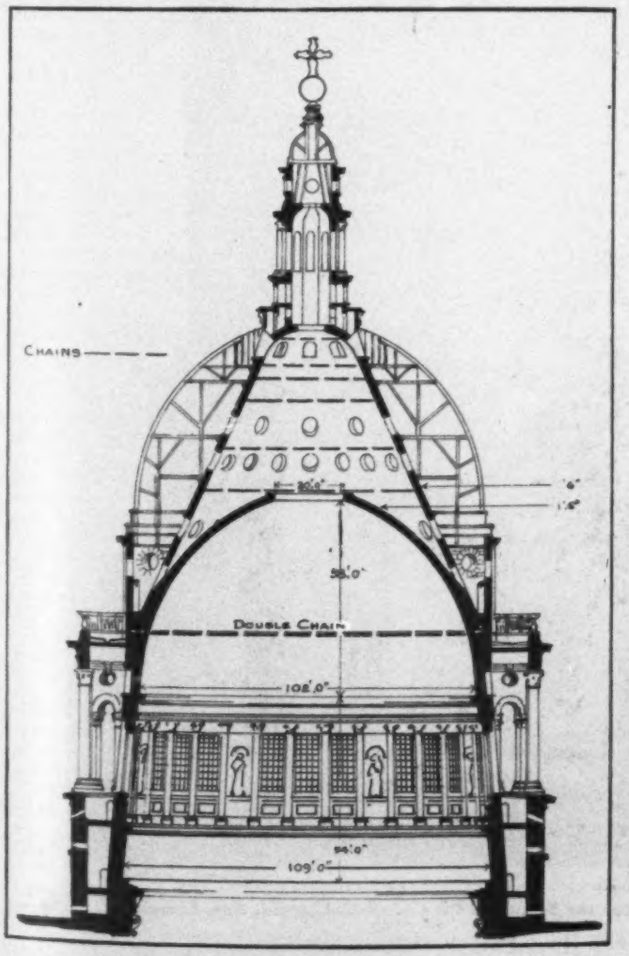


Fig. 37.—St. Paul's, London.

Fig. 39.—Dôme des Invalides, Paris.

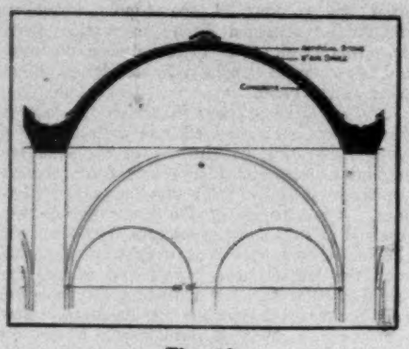


Fig. 40.

by a secondary drum. The outer shell is carried on this secondary drum, and is held firm by a stone lantern, the lantern itself being supported mainly on the intermediate shell.

It is obvious from the above analysis that the construction of domes in brick or stone was a work requiring considerable skill and involving great expense. Timber used alone was unsuitable for large domes on account of the heavy scantlings necessary and its great liability to destruction by fire, but the experiment was made in 1783 at the Halle au Blé, Paris, where the central space, 135 ft. diameter, was covered by a timber dome. This structure was burnt down in 1802, and replaced nine years later by a dome of cast and wrought iron framework. From this period iron, steel, concrete, and reinforced concrete have been used extensively for this work. The dome of St. Isaac's Cathedral, Petrograd, built about 1850, is constructed entirely of iron on a design similar to that of St. Paul's, London. Here the cone and lower dome are composed of heavy cast iron stanchions, and the whole structure is ponderous and crude. The dome over the Capitol at Washington, finished 1873, is also based on that of St. Paul's, and is of cast and wrought iron, but in this case lattice girders are employed, and the work is executed with considerable scientific skill. In 1855 the reading-room of the British Museum, 140 ft. diameter, was covered by a dome of brickwork with iron ribs. Two air spaces are provided, one between the dome and the external copper covering, to modify the effect of the difference between the external and internal temperatures; and the other between the dome and an internal ceiling, to provide a chamber for the extraction of the vitiated air.

At present concrete, either in a pure state or reinforced by steel, is much used in dome construction. The low cupolas over the nave of the Roman Catholic Cathedral, Westminster (Fig. 40), are composed of concrete, 3 ft. thick at the base, diminishing to 1 ft. 1 in. at the crown. They are protected from extremes of temperature by a thin external covering of artificial stone, with an air space of 2 in. between the covering and the concrete, the covering being supported on ribs. These cupolas, which have an internal diameter of 60 ft. and a rise of 22 ft., were constructed on timber centering built up from the ground. One of the most prominent examples of recent years from a constructive standpoint is the dome over the Central Hall at Westminster. This is composed of two shells. The lower shell, a saucer-shaped cupola 80 ft. diameter closed at the crown, is of reinforced concrete. The outer dome, rising at a much greater height from a plan almost square in shape but with chamfered corners, is built of light steel framework, with boarded surfaces and lead covering.

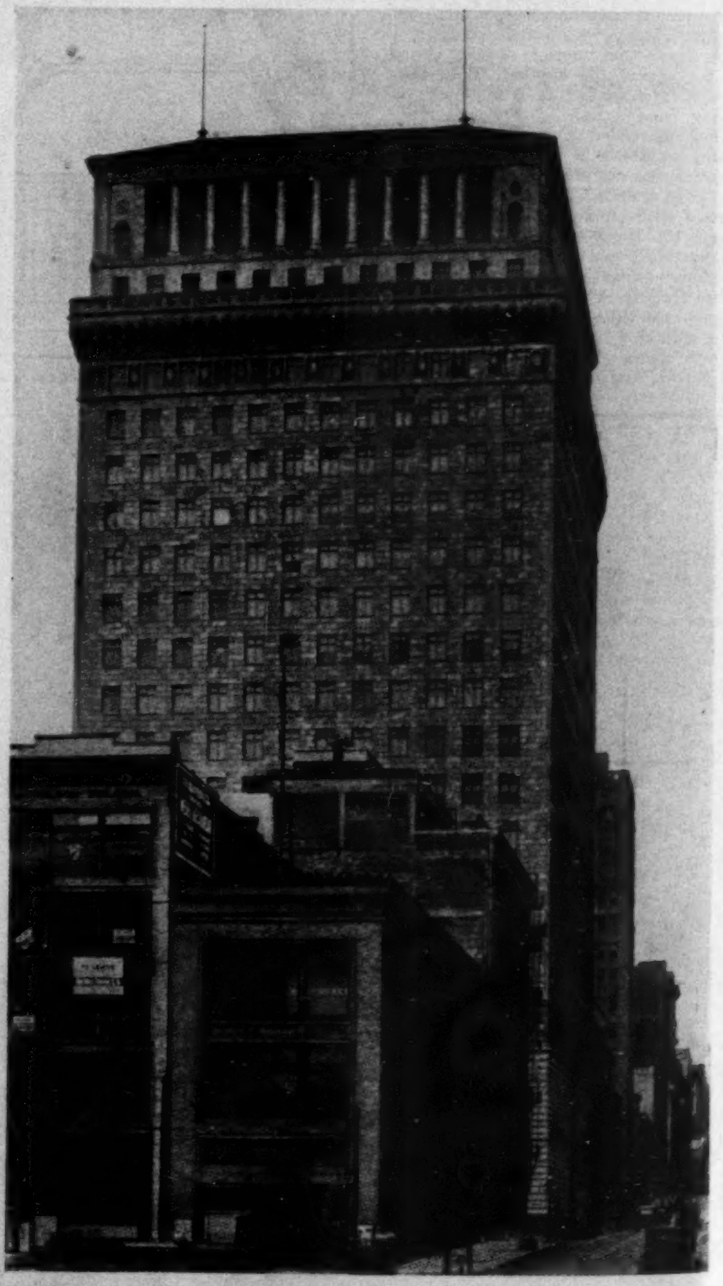
Many of the problems of dome construction with which the builders in all ages were faced still await satisfactory solution. The use of concrete, or even of ferro-concrete, is not modern, though the development of the latter on more scientific principles is a great step in advance; but the all-important problem of acoustics remains yet unsolved, while the attainment at once of good external and internal effect has been only partial. Though such domes as those of St. Peter's, Rome, and St. Paul's, London, have greater dignity when seen from without, no product of the Renaissance or of modern times has reached, or even approached, the exquisite beauty of the dome of St. Sophia at Constantinople as seen from within.

THE MALVERN HILLS.

THE Hon. Secretary of the Malvern Field Club, in a letter to *The Times* on September 15, called attention to the quarrying operations being carried out on the Malvern Hills and the damage resulting, particularly on the Worcestershire side, and stated that the attention of the club and the Malvern Geographical Society had been directed to a paragraph on the subject which appeared in *The Times* of the 11th inst.

In *The Builder* for May 22, 1909, we drew attention to this subject in connection with an action brought by the Conservators of the Malvern Hills against the Lady of the Manor and her lessee to restrain defendants from disfiguring the hills by quarrying operations, but the action failed, as it was held that there had been no breach of the conditions imposed by Act of Parliament and a sufficiency of common had been left to the commoners and the defendants were acting within their rights.

The disfigurement of the hills, which are Malvern's chief asset, is now certainly very marked, and we can understand the above-named societies being concerned about the future. Our present object is merely to draw the attention of those concerned to the litigation which took place in 1909.



From the *American Architect*.

Building for the Standard Oil Co. of California, San Francisco.

MR. GEORGE W. KELHAM, Architect.

EXHIBITION NOTES.

THE VICTORY SCHOLARSHIP.

The problem set in the final competition for the Victory Scholarship of the Society of Architects (sent in August 27) was a hydropathic establishment set on high ground overlooking a valley in which are medical springs. There were to be a main building, an administration building for manager and senior staff, a pump room, and a garage. The lower portion of the grounds was to be used for grottoes, tea rooms, &c., and paths were to be arranged with easy gradients for invalids and bath chairs. The accommodation was to be provided for sixty male and sixty female patients, with dressing and treatment rooms in convenient proximity; recreation, reception and reading rooms common to all, and on the first floor residential accommodation for the nursing staff. The competition drawings are on view on the first floor of the Society's building in Bedford-square. The Victory Scholarship is of the value of £100 and carries with it a gold medal. The money must be used for advancing the professional education of the winner in a manner to be approved by the jury. Each competitor who deposits a complete and approved design will be paid five pounds and receive a voucher of exemption in the subject of architectural composition and design for the Society's examination in architecture and admission to the First Atelier of Architecture.

The response to the competition has been a good one. Some of the drawings are excellent in quality. The problem is obviously best solved by the designs of the winner, (No. 124), and Nos. 125, 135 and 130. We are glad to note the simple and sensible treatment of the designs to which we have referred. Whether such a scheme of plan would be wholly acceptable to the management of a hydropathic establishment we cannot say, but the plans show good appreciation of the problem. In the design No. 135 the provision of loggias is a good feature. The winning design has an interesting and effective central feature, and the whole scheme is dealt with in a broad and sensible fashion. The author of No. 130 is to be commended for his careful working out of garden features. This competition should have a value in showing what can be done in a subject of this kind for a pleasing result without any undue overloading of features or ornament. Little as we may wish to see tradition and style thrown overboard, it is satisfactory to see students whose aim is to produce simple, sensible treatment of masses and details without an obsession of "style" in orders or details. In this respect such a competition as the above is encouraging and hopeful.

Students' Designs.

Two Exhibitions of Exemption Designs are on view this week. Those at the A.A. are designs submitted by students exempted from the Intermediate Examination of the R.I.B.A. Until next Wednesday the designs which exempt students from the Final Examination (with the exception of Professional Practice) are exhibited in the University of London Bartlett School of Architecture in Gower-street. The A.A., the Liverpool University, the Glasgow School of Architecture, and the Robert Gordon Technical College at Aberdeen are represented.

At the London University three galleries are devoted to the exhibition of the students' designs—on the ground and two upper floors.

Amongst the first and second classes of the Architectural Association is a good scheme for a bathing establishment by Mr. G. Jellicoe. In the fifth year work Mr. G. Crickmay has a meritorious design for a Repertory Theatre and a well-designed bathing establishment. In the fourth year first class Mr. C. Hyslop has some good coloured designs of a seaside bathing establishment with a very telling and effectively designed elevational treatment.

In the Liverpool University section Mr. E. Fry has a collection containing some excellent work, including a bridge, lakeside restaurant, cinema, &c. Mr. H. Hirst is best in his Kursaal design. In his Document Warehouse Mr. D. Brooke shows some commendable quality. Mr. Raafat's Mosque design shows considerable ability. A large amount of careful labour is seen in Mr. C. Hutton's Repertory Theatre drawings. None of the designs can be said to be distinguished in any special sense, but are most noticeable for their care and effort.

The Glasgow School of Architecture contributes some designs of which the best are the façade of a Royal Palace and a clever set of drawings for Municipal Buildings by Mr. J. C. Coia, and a Parliament House by Mr. J. Fergusson (better in its design than its presentation). Mr. T. Scott Sutherland (Aberdeen School of Architecture) is at his best in a Cinema design for a triangular site.

At the A.A. Galleries are some excellent drawings (from the Liverpool University) of a Lakeside Swimming Club by Messrs. N. A. Norbury, F.G. Fairhurst, Richard W. Briggs, and Elsie Rogers. A cinema and café by W. H. Owen; a theological college by J. Willis. Amongst a number of designs for market halls and designs for buildings round a circus one of the best is for the former subject by Sheelah A. Wilkinson.

The design for a Town Church by Geo. L. Walls (Edinburgh School of Art) shows decided promise in its large and simple handling.

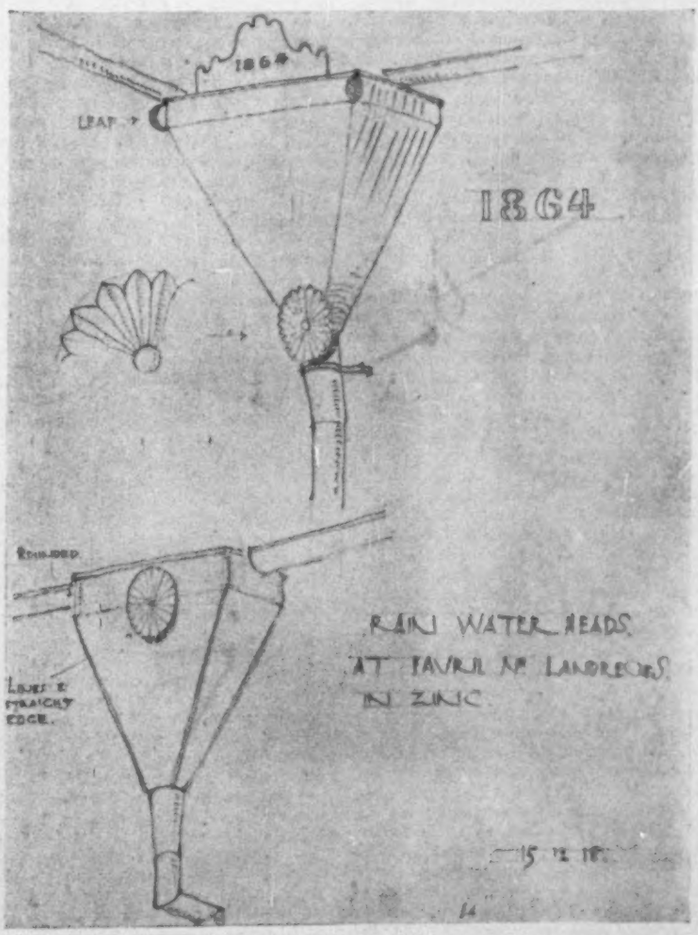
From the Cardiff Technical College come some quite good drawings by L. Monroe and W. Thomas. A good sense of scale is seen in a Royal Naval College by Jas. Dowson (Aberdeen School). There are two or three subjects from the Cambridge University, Justin Vulliamy, and N. Pourlinson.

Very good drawings appear from F. P. Green, Leonard J. Young and another (A.A. School). The Modern Church designs are promising by A. G. Brodie, A Maxwell Allen, &c. An excellent set of line drawings are those for a workshop by S. D. W. Timmins (A.A. School). Some good pencil drawings by R. Courtney Theobold, C. W. Eve and M. A. Susson are sent from the London University.

Looking back over the exhibition referred to above we note a lack of freshness or spontaneity which we might look for if the students took a more real interest in their work. The standard which is allowed to pass design through for exemption is certainly not a high one.

Design for Gates at King's College, Cambridge.

This design (see p. 445) was awarded first prize in a recent competition, in which there were 28 competitors. The gates are to be presented to the College by Sir Charles Walston, who has been a Fellow of the College for more than 40 years, who, feeling that "paper-designing" was ineffective, and that each design should be organically connected with the purpose and structure of what it was meant to decorate, and especially with the material in which it was to be executed, and that the designer should be the craftsman, offered prizes for designs for the gates. The first prize was awarded to Mr. A. W. Elwood, M.I.S.I., art metal worker, of 119, Denmark-road, Camberwell, S.E.5, who is now making these gates; the second to Mr. S. Bowman, and the third to Mr. F. Adam. The designs submitted in the competition were judged by Sir C. Harcourt Smith, Mr. Watts (of the Department of Metal Work at the Victoria and Albert Museum), Mr. F. V. Burridge (of the L.C.C. Central School of Arts and Crafts), and the College Gates Committee, consisting of the Provost, Mr. Corbett, Sir Charles Walston, Mr. Shepherd, and Mr. Milner White.



FROM SKETCHES BY MR. STANLEY J. WEARING, A.R.I.B.A.

A HAPPY FAMILY.

WE have received the following communication from Mr. T. Sumner Smith, F.S.I.:—

The contents of *The Builder* for August 3 make excellent reading about those engaged in controlling and governing the building industry. But this reading gives one a disturbed and uncomfortable feeling. This particular issue seems to create this atmosphere, beginning with the leading article on "Noblesse Oblige," and ending with the paragraph "Architects and Builders," on page 194. Practically everything in this issue would seem to be in contradiction to the spirit of its leading article.

Is there something sadly amiss with those engaged in the building industry or are they merely trying to seek higher principles? Has our conduct been such, or is it such, that we require "codes" and the like to bring us to a frame of mind for truth and honourable dealing? "We should all like to feel," so you say in your leading article, "that the practice of architecture is altogether in the hands of those who reverence truth and fair dealing." Does this not imply that it has not been so in the past, nor is so to-day, and that the tendency but for this code would seem to be against it being so in the future. And is it not borne out by your statement: "The evolution of fine art should surely be of less importance to us than the true and honourable way in which we carry out our obligations. . . ."

The scramble for an existence, in which fees and profits are the goal, may tend to make us neglectful or careless of the consideration for others. Yet at heart all may be in agreement and admire: "The architect whose great aim is to leave behind him some impress of beauty in his buildings, whilst adding to the convenience and comfort of life. . . ."

In a general way the latter is not a sentiment in which the architect stands alone, but the opportunity to many for expressing it is unfortunately rare. How blest, then, the architect is that he may be able to do these things, fortunate in his calling or chosen profession, because, without doubt, they must add to his pleasures and interests in life. But should the work be its *only* reward, like the rest of humanity, the architect must live, and to live he must be remunerated for his work in the form of fees. These fees should be such as to enable him not only to live but also to enable him to achieve his aim and object. No reasonable being could take exception to this; rather he must approve and appreciate, for may he not as well as the rest of humanity benefit thereby? It might properly be argued and maintained that no one, whatever his abilities may be, ought to practise architecture who is not imbued with this desirable sentiment. Perhaps there may be some who might claim that this is not so much a sentiment as a vital necessity, for by its absence the architect may do incalculable harm. Proportionate to his power is his opportunity of doing good or evil. Which shall it be? But with that we need not dwell.

A point, however, of import is this: Is there an unwritten law that an architect should not practise architecture for a living, but rather practise art for its own sake? In my humble view, if this is so, then it is entirely wrong. To be a capable architect, or have the capacity or inclination to engage in architecture, it does not follow that one needs be blessed with any great amount of worldly possessions, but to undertake work for less than the usual and recognised fee, even when by the plausible excuse of practising art for art's sake, is an injustice to one's fellow-practitioners, and may be the means of keeping back a more capable but less fortunately placed person; probably may result in a great loss to the community. Ability should receive every assistance and help possible, and not be held in check and kept back. There is not a superabundance of this that we need waste it. Therefore, it is to be regretted that a code of professional conduct became necessary to curb and control those at the top as well as those at the bottom, and that no other means were devised—and perhaps more effectual—to achieve that object. However, it may be, as you say, "if we are to have a stable and secure civilisation we must set up laws and enforce obedience to them." Anyhow, we must have architecture, and if we are to have that we must keep an open door, admit all and sundry, no matter from what station of life they spring, so long as they conform to the rules and regulations laid down and approved of by the majority.

From a perusal of the article on "Building Examinations," by Mr. W. J. Stone, M.R.S.I., we may learn that the Institute of Builders are seeking to make a close profession in building by restrictive examinations, the spirit of which is totally at variance with their own principles: Competition, Enterprise, Industry. We must have builders, not necessarily contractors, but builders of the right kind to execute architectural works, and it does not follow that the sons and relatives of the present master builders will, of necessity, make the best builders of the future. Mr. Stone says, and rightly, that "Bookkeeping and accountancy are no doubt important, but not more so than the efficient training of craftsmen." Then he goes on to say, "In all too many cases the small profit is due to lack of scientific organisation and method." No bookkeeping and accountancy, however good, would remedy that.

The financial side of building to-day is probably too much overstressed by builders, and too little is made of the efficient training of craftsmen. As regards the latter, I am not here referring to the kind of "workmanship art" so forcibly put forward by Professor Lethaby as a means of restoring our sanity in building. The problems in building are more than proper bookkeeping and accountancy. "The object of true education," making use of Professor Lethaby's phrase in the same issue, "should be directed towards the manner by which these problems may be solved, which are, according to him, "so fully conditioned by data, facts, materials, and economics."

This question of commercialism—profit arising from building—is well exemplified by your paragraph on the "Standardisation of Buildings," on page 162 of the same issue, and the subsequent paragraph: "Levelling Down," which, taken together, may be taken to mean that, inasmuch as true craftsmanship has suffered by commercialism, the architect will be the next to suffer by absorption in the commercial house, taking his instructions "to design" to pattern. Quoting again Professor Lethaby: "Building is high activity, experiment, adventure, invention." It is possible to conceive that in the near future the architect may take little or no part in this — when "Henry Fords" take seriously to the business.

I would draw attention to page 182, a paper read by Mr. F. H. A. Hardcastle on the "Work of the Quantity Surveyor," which I deduce as being a comparison, say, between the "Crinoline and Bobbed Hair" periods in quantity surveying. However, there are, in addition to this, other points of interest, for, according to him: "The whole process of setting on foot a building enterprise . . . furnished an example of what they knew in physics as 'accelerated velocity.'" He tells us that architects are harassed in having to prepare the drawings quickly, the surveyor—well, having to work late hours at the office, and the estimator working overtime in the "Tube." Why is this—and for what? All for fees and profit? General Housing Memorandum (No. 64), with regard to fees payable to quantity surveyors in private practice for work—for reference, see page 183, Code of Professional Conduct. V, Noblesse Oblige, in which the chief prize awarded is fees. Bookkeeping and accountancy stands for profit. The quixotic position created by the Pontypool (Mon.) Master Builders' Association declining to tender for work as a consequence of architectural work having been done at a reduced rate by someone not a member of the (architectural) profession.

As a comparison with this "accelerated velocity," let us examine the point made by Mr. Hardcastle in another sphere of the professions. "When the solicitors on both sides had furnished their leisurely operations and the land was conveyed . . ." Singularly, that on page 170, you give reviews of two books on "The Law of Property Act, 1922," which comes in operation on the first day of January, 1925. Three years to masticate their own class of work. Time enough, surely, to write treatises on the subject, however complicated, which may even then befog us with its complications. Leisurely! That is a word well worth noting. It took about a similar time to prepare the Standard Measurement of Building Works, and are we much nearer? Mr. Hardcastle tells us that it has received the approval of the Royal Institute of British Architects. That must be news to the majority of the brethren of the professions. Why, then, the delay? Is there a "snag" somewhere? Let us read on: "It remains to be proved whether there would be found in the trade sufficient solidarity and public spirit to enforce its general application." The next flood may lift us clear of the obstacle.

Building is high activity, experiment, adventure, invention: There are two schools—in one, architects, surveyors and builders; in the other, speculative builders, specialists, and the like in building. The latter have, within recent years, made vast inroads, and look very much like swamping the former in the near future; anyhow, they are the only ones who are really busy to-day and making progress. Is not the answer to all this to be found in what Professor Lethaby says on page 178: "I think an early step would be a joining up with builders, engineers, and craftsmen in the common objective of refounding a human manner of building. What I should really like would be a School of Building common to the lot." Verily we are "A Happy Family."

The late Mr. Augustus W. Tanner.

MR. R. STEPHEN AYLING, F.R.I.B.A., has sent the following notes on the late Mr. A. W. Tanner:—The death of Mr. Augustus W. Tanner occurred on August 4. Mr. Tanner, at the time of his decease, had reached the age of 80, and only retired from active professional work two years ago. He was the oldest Associate on the R.I.B.A. register, having been elected in 1870.

After serving his articles with Mr. Giles, of Craven-street, Strand, he entered the offices of the late George Edmund Street, R.A., and acted as one of his principal assistants during the erection of the Law Courts. He afterwards entered into partnership with Mr. Romaine-Walker, and, under the name of Romaine-Walker & Tanner, carried on private practice until 1896.

In 1883 he was appointed District Surveyor for Hatcham, under the Metropolitan Board of Works, and in 1896 for Rotherhithe, part of Camberwell, Hatcham, and St. George's-in-the-East, under the L.C.C., when the acceptance of this office rendered it necessary for him to dissolve partnership with Mr. Romaine-Walker. He was again reappointed by the L.C.C. for the district of St. George's-in-the-East in 1907, and retained that position until 1921.

Having acted as District Surveyor for about thirty-eight years, he naturally had a wide knowledge of the old Building Act and its many amendments. He had a keen sense of justice, and in his official capacity held an equal balance between the letter and spirit of the law. A picturesque personality, quick to anger and equally quick to forgive, an indefatigable worker, and a really good fellow has gone to his well-earned rest.

DEESIDE REGIONAL PLANNING.*

THE area included in this scheme comprises, roughly, the shelving coastal strip forming the southern shore of the Dee estuary, and extends from Chester on the south-east to the Point of Air on the north-west. The district is at present somewhat of an industrial derelict, and the Dee estuary is so much silted up that, with certain reservations, it is a negligible factor in the future industrial development of the neighbourhood. The main artery of communication through the district is, of course, the London Midland and Scottish Railway line which, running to Holyhead, follows the coast the whole way from Chester to Bangor, while the same strip of level coast land takes the main road which is by no means of uniform efficiency. The Halkyn quarries, situated about three miles inland from the town of Flint, form at present the principal industrial centre, and it appears that there exist in the Halkyn mountain deposits of lead and zinc unique in this country. In order to provide access to and from these quarries and mines a Mid-Flintshire Railway is proposed, possibly to connect Wrexham and Mold with the coast line near Holywell, and it is pointed out that such a line would help to develop the uplands west of Connah's Quay, which are at present isolated. In connection with Holywell it is interesting to recall the successful fight that was waged some twenty years ago in Parliament, whereby the output of St. Winifred's Well was preserved from underground tapping, which would have ruined the industries that had established themselves along the resulting stream—industries that still exist.

The only town of real importance embraced by this scheme is Chester, and we note with satisfaction that it is not regarded as desirable to attempt its conversion into a commercial centre, not only because it is in the widest interests of the city that its amenities should be preserved, but also because its situation is unsuited to its commercial development. Chester is, of course, one of England's Roman towns, and the old Roman cross road centre still enjoys its original importance; in fact, it has now to carry the traffic poured in by no less than ten radial roads. As a remedy for the resulting congestion, it is proposed to form a ring road almost entirely outside the city boundary to take the heavy traffic that has no reason to stop in Chester, and whose presence in the streets is not desired by the city authorities. Further relief to the town is recommended in the form of a new road connecting Ellesmere Port and Queensferry Road which would probably pass Ledsham Station.

In order to facilitate coastal traffic along the Dee, it is suggested that a by-pass road should be constructed to branch off below Saltney, near the Chester ring road, and connect direct with the coastal road beyond Connah's Quay, leaving the latter, Queensferry, and Sandycroft on the north, and Hawarden on the south.

An interesting account is given of the mediæval and static town of Flint, which was laid out on town-planning lines by Edward I; its peculiarity is that the streets all run in one direction, there being only one cross road—that is still used as the main road along the coast. The region is singularly rich in prehistoric remains, earthworks and castles, and this volume includes a map showing their situations.

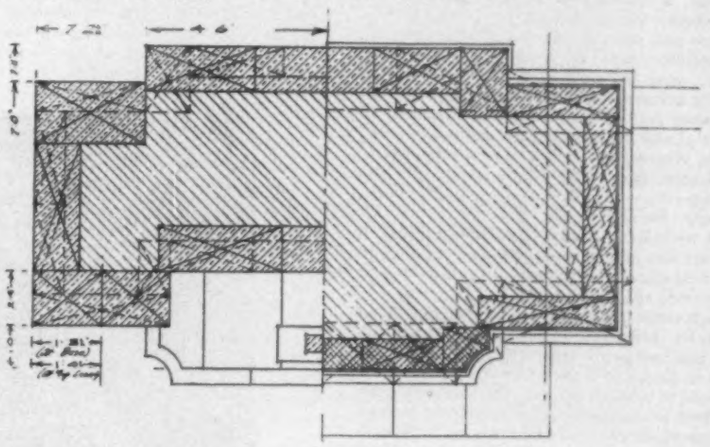
It is suggested that housing areas should be limited to the land lying above the 50 ft. contour line, heavy trades being restricted to a strip along the River Dee, with the single exception of a small area running up from the coast towards Holywell.

No less than nine local authorities are concerned with this scheme, and although the region may not be one that lends itself to dramatic proposals, it should certainly be capable of enjoying increasing prosperity as it gets more fully organised and developed. The Report itself is attractively produced.

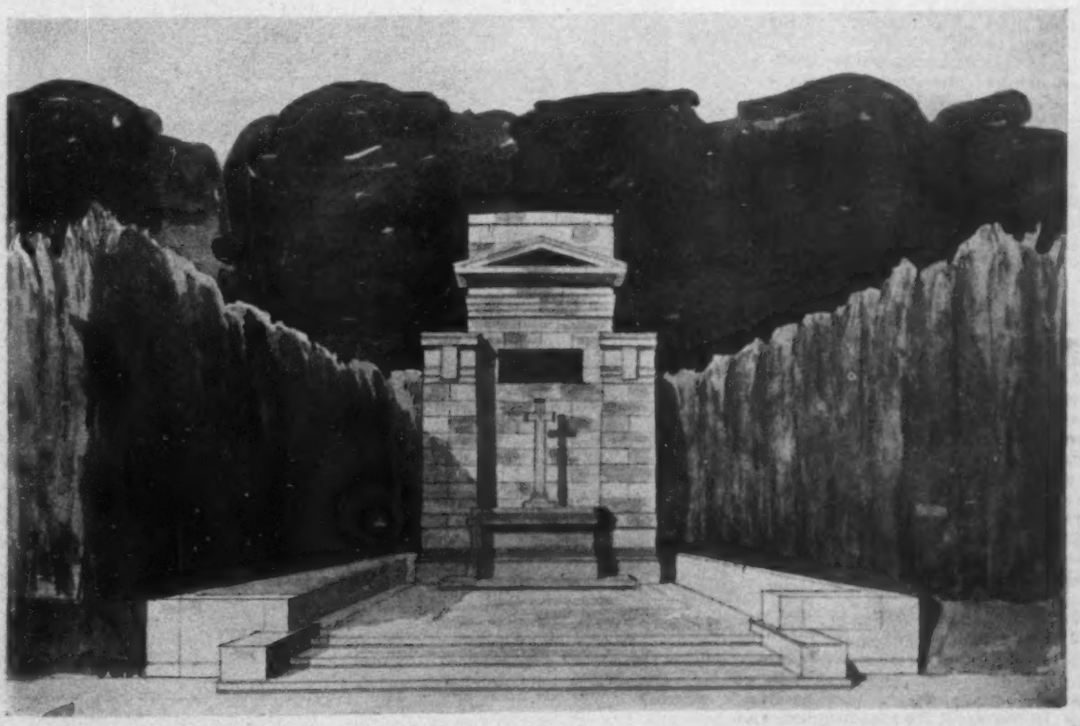
*"The Deeside Regional Planning Scheme (Chester and Flintshire)." The Report prepared for the Joint Committee of Local Authorities by PATRICK ABERCROMBIE, SYDNEY KELLY, and THEODORE FYFE. (London: Hodder & Stoughton, Ltd.)

A WAYSIDE SHRINE.

THIS shrine, which will commemorate the victims of an Irish ambush, is to be erected in Connacht on the roadside close to the spot of the ambush. The architect is Mr. Gabriel Porte, of Belfast. A local limestone will be used for the monument, the base and altar being Irish granite. The cross will also be in limestone with a lead inlay.



A WAYSIDE SHRINE, CONNACHT: HALF PLANS.



A Wayside Shrine, Connacht, Ireland. MR. GABRIEL PORTE, Architect

BOOK REVIEWS.

Canterbury Cathedral. By S. A. WARNER, M.A. (Oxon). (London: Society for Promoting Christian Knowledge.) Price 7s. 6d.

Mr. Warner's handbook on Canterbury Cathedral belongs to that class of works upon architecture in which the artistic and constructional value of the buildings under discussion are examined side by side with the purpose for which they were erected. Some notes on life within the monastery originally attached to the cathedral add very considerably to the interest of the building and give the reader an opportunity of realising the functions of a religious establishment as a centre of civilisation and culture in days when other fashions prevailed and education, as we understand it, was by no means general. A brief account of the more important among the long line of archbishops also helps to illuminate the political significance of the archbishopric both at home and abroad, since the history of Canterbury is concerned with the dealings of the English Church with that of Rome, a connection that passed through many stages wavering between complete subservience and open revolt and final separation. Independence was a leading characteristic, however, and the authority of the Pope was generally acknowledged most devoutly when the Archbishop for the time being felt the need of a powerful ally in some struggle against the king and the representatives of civil as opposed to ecclesiastical law. The character of Thomas à Becket—or, as Mr. Warner amends the name, "Thomas Becket"—and the nature of his conflict with King Henry II is recapitulated in a manner calculated to explain the hold upon popular imagination exercised by this loyal and high-spirited son of the Church.

In important particulars Canterbury Cathedral is Becket's Cathedral. The eastern termination of the building is a rounded structure generally known as Becket's Crown, and of the remaining fragments of ancient glass in the windows some of the best both in colour and in historic interest are those which illustrate the miracles performed near the shrine of the great English saint. Most eloquent of all, the worn kneeling places in the old paving stones before the miracle windows testify to the extraordinary charm exercised by a steadfast man in an age of anarchy, and the appeal of his tragic death.

Both the life of the community and the architecture of the buildings centre about the monastic waterworks introduced by Prior Wilbert in 1160, and Mr. Warner's account of the scheme serves to connect the two parts of his book. The author agrees with many other writers in attributing a lack of personal cleanliness to the people of England in Norman and mediæval times, and his remarks on the Canterbury water supply might be taken as pointing to an exceptionally favoured state of things at that monastery. The remains of extensive waterworks lately discovered in excavations at Rievaulx and Melrose Abbeys point to the fact that cleanliness and sanitation were probably in quite as forward a state as in Southern Europe to-day. The rule that now holds good also applied then, and people who happened to like to be clean generally found the means to be so.

The description of the architecture and fittings of the church is clear and is illustrated with plans and photographs and by reproductions of the author's sketches in line. Professor Willis's monumental work on the "Architectural History of Canterbury Cathedral" is freely referred to and several of Willis's illustrations are republished in the book.

The Hoarding. By JOHN OWEN. (London: Hodder & Stoughton.) Price 7s. 6d. net.

It is always entertaining to read a novel dealing with a commercial problem, and particularly so to those who feel that they have ideas on the subject. In this novel the author finds his setting in a world dedicated to commercial advertising, and his characters supply the arguments for and against the ethics of advertising. We have the whole case for advertising put forward by Boxrider, the publicity man, who knows what he wants and means to get it. The "Transatlantic argot" of the business man is subtly contrasted with the argot of the art world. Boxrider's creed was at least honest; nothing was too good for his work, and the picture on the hoarding must be a fair statement of the advertiser's claim. A picture might be good enough to hang in the Academy, but was it good enough to reproduce for the hoarding—the poor man's picture gallery?

The philosophy of advertising art, so far as we can gather it, seems to be that pictures of some sort are assumed to be necessary on the hoardings, and that being so it is better for the minds and morals of the public that it should have the best pictures. We can never make out in this theory whether the art is incidental to the pills or soap which it advertises, or *vice-versa*, but it is at least something in this imperfect world that a part of the advertiser's motive is that if pictures must be seen on the hoardings it is a method (though a strange one) of bringing great art into the lives of many people. "The Hoarding" is a competent piece of work, written with care and insight. It deals with a modern business problem in a clever manner, with the lightness and interest which a novel should have. It is not too much to say that a novel of this nature often achieves a result which is denied to the philosophical refinements of the essay.

The Petrology of the Sedimentary Rocks. By F. H. HATCH and R. H. RASTALL. (London: George Allen & Unwin, Ltd.) 2nd edition: 1923.

Those of our readers who are interested in petrology will probably be conversant with Dr. Hatch's book, published a great many years ago, dealing with igneous rocks. Petrologists are apt to give too much attention to this branch of the subject, and the temptation is obvious because such rocks lend themselves much better to microscopic work and distinctive mineral investigation. From a practical standpoint, however—and this mostly concerns us—there is no doubt whatever that the sedimentary rocks are of far greater importance. Though the work under review does not deal with the subject of these rocks from the utilitarian standpoint of Mr. Howe's recently published work on the Geology of Building Stones, it must be remembered that every practical outcome of science must be the result of initial researches in what the lay reader would regard as pure science.

The book, of over 350 pages, and containing more than 50 illustrations, is divided into two parts, the first giving a petrological account of the sedimentary deposits—which, of course,

IN LOVING AND
PROUD REMEMBRANCE
CECIL FREDERICK KING
M.C. D.F.C. CROIX DE GUERRE AVEC PALME
CAPTAIN ROYAL AIR FORCE
WHO LOST HIS LIFE WHILST FLYING
ON DUTY AT SEDGEFORD
NORFOLK JANUARY 24 1919
AGED 19 YEARS 11 MONTHS
THE BELOVED SON OF
FREDERICK HAMILTON KING
AND NORA HIS WIFE
OF SPRINGFIELD DUKES.

Statuary Marble Cartouche, at Springfield, Essex.
Designed by MR. MAURICE B. ADAMS, F.R.I.B.A. [Executed by Messrs. Farmer & Brindley.]

include by far the most of our building stone—in some 150 pages; the second dealing with metamorphic stones, using the term in its widest sense, and here the discussion on cementing materials has some bearing upon the durability of many stones in general use.

The work concludes with a useful chapter on the weathering of stones. The joint author, Dr. Rastall, has had a long experience in the economic aspects of geology at Cambridge, where the collections give every opportunity for detailed study. We commend this book to all interested in a subject which is very much in the forefront at the present time.

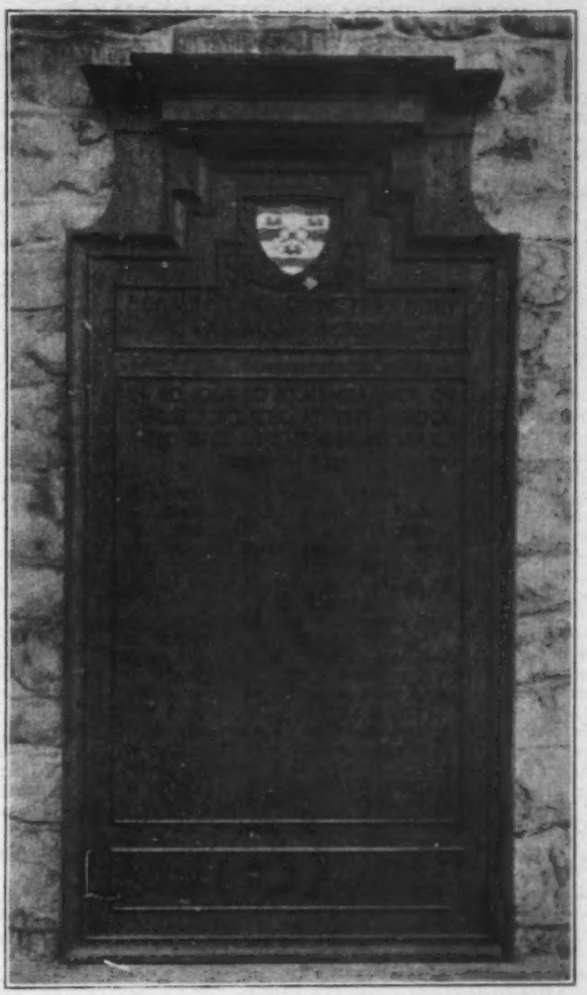
Plane and Geodetic Surveying. By DAVID CLARK. (London: Constable & Co.) Volume 1, 26s.; Volume 2, 25s. net.

Surveying is a general term for a large subject; there are many branches. What may be termed ordinary land surveying, to prepare plans of property, is a comparatively simple matter compared with geographical surveying, to produce a good map of a country for general purposes. In the former the surface of the earth is treated as a horizontal plane; the latter treats the surface as of spheroid form and calls for exceptional care and accuracy. The two volumes prepared by Mr. Clark deal respectively with plane and geodetic surveying. The first volume, containing ten chapters, gives a clear statement of the more common surveying instruments and surveying operations. The subjects of chain surveying, theodolite and compass traversing, ordinary levelling, plane table surveying and contouring are described as applied to cadastral and engineering surveys. Where rapid work is desired, the plane table can be used to advantage to fill in survey details. The office work of computing areas and volumes receives attention. Earthwork tables are obtainable and facilitate calculation.

The chapter on setting-out work is well worth study, covering as it does methods of setting out various curves, including cases where point of intersection of tangent is inaccessible. A very convenient set of tangential angles and of angle multipliers for setting out curves is published, printed on cards 3 in. by 1½ in. for placing on the theodolite when in use. The values given range from 5 to 200 units as a radius. The chapters dealing with the principles and practice of tacheometry for obtaining distances by measuring angle subtended by a certain known space on a rod, hydrographical surveying, including marine surveying and stream measurement, cover the ground thoroughly.

The second volume, of seven chapters, is concerned with branches of higher surveying. In geodetic surveying the primary object is to fix absolute positions on the earth's surface and establish a system of widely-separated points. The surveyor then has to deal with problems relating to the determination of time, true meridian, latitude and longitude. For an independent survey recourse must be had to astronomical determinations; but if one side of an accurate triangulation can be taken as a base, given sufficient data of one side, astronomical observations are not necessary. The principal methods of taking astronomical observations are described, based on particulars given in "The Nautical Almanac," which supplies the data necessary for the solution of problems in field astronomy. The precise measurements required include corrections for: curvature, refraction, parallax, local attraction, temperature variations and the like, hence considerable space is given to survey adjustment and data for final corrections. Suitable types of theodolites and levels are illustrated and adjustment explained. The chapters dealing with topographical reconnaissance, photographic surveying, the use of which is limited, and map construction give a clear presentation of essential points. The author lays no claim to originality but has endeavoured—not without success—to treat the subject in a concise manner.

Each volume is provided with a copious index and sets of illustrative numerical examples and answers are given. References are given to commonly accessible text books and papers on subjects treated in the text which should prove useful to readers requiring further information. As text books the volumes are suitable for students preparing for examinations necessitating knowledge of surveying, supplemented by field work and instrument manipulation.



Memorial at Beaminster Grammar School. MR. C. W. PIKE, A.R.I.B.A., Architect.

[This memorial is in teak, with the lettering incised and the arms of the founder (Francis Tucker, *circa* 1550) carved in flat relief on a raised shield, and painted in heraldic colours. The joinery and the carving were executed by Messrs. Shapland & Petter, Barnstaple.]

Warming Buildings by Hot Water. By F. W. DYE. (London: E. & F. N. Spon.) Price 12s. net. Third edition. 1923.

Those who are familiar with the earlier editions of Mr. Dye's book will find a good many changes in the present volume. As in former editions, the subject is treated in a very simple and readable manner, making the book suitable for those who do not aspire to any special engineering or mathematical knowledge. Introductory chapters are followed by a description of various low-pressure piping systems, concluding with a short but useful account of calculating pipe sizes (chapter 9). Only 17 pages are devoted to the discussion of accelerated systems which, in a volume of nearly 300 pages, seems little for such an important development in the use of hot-water heating, and only a page in this chapter is assigned to mechanical propulsion. Various difficulties and questions of heat emission then bring us to the middle of the volume. A chapter follows on ascertaining the heating surface necessary under various conditions, followed by an account of the difficult subject of testing with the author's interesting series of temperature ranges. Some 40 pages are given to descriptions of boilers, pipes and fittings, and the book concludes with an account of high pressure system and air-heating plants, followed by appendices of tabular data. We think that this new edition should maintain the popularity of the author's work.

Industrial Organisation: Developments and Prospects. By JOHN LEE, M.A., M.Com.Sc. (London: Sir Isaac Pitman & Sons, Ltd.) Price 5s. net.

This book is based upon a series of lectures delivered at Cambridge University at the instance of the Board of Economics. It is practically a summary of various recent developments of industrial organisations throughout the world, and it may come as a surprise to many to realise the amount of attention which the problem has received, and how far we have progressed. The author states that it was not his object to build up any theory of industrial organisation; nevertheless, we like his conjectures, which appear to us to be reasonable and sound even if they are tentative. It would be a good thing for the country if everyone realised with the author that "... the one clear truth which was emphasised was that, just as political constitutions have evolved slowly and from simple to complex structures, so industrial constitutions must evolve."

Altogether this is an excellent book for everyone engaged in industry, and for those who take an academic interest in industrial organisation.

THE ROAD PROBLEM.*

Of the many questions of national importance with which we are confronted, one of the most urgent is that of the use of our roads and their construction and upkeep. The attention which has been given to the subject in recent years, and especially since the war, is some indication that public authorities and their engineers and surveyors, recognising the needs of the time and the increasing use of our highways and byways by mechanically propelled vehicles, are fully aware of their obligations to the public. The extraordinary development in the use—the improper use sometimes—of our roads by motor traffic, not only of the main roads but of roads of lesser importance, must have struck anyone whose mind goes back only a few years before the war, when beyond the push bicycle there was very little but horse-drawn traffic, and when the pedestrian was able to use the roads with far more safety than he does to-day, though, perhaps, because of the surface condition of most roads, with no greater pleasure. The attention given by road engineers to the construction of roads has, in a large measure, solved the dust and mud problem, but the war arrested the progress being made, and it is only within the last few years that it has been resumed and that such an advance has been made in the provision of roads constructed to satisfy all reasonable needs. To what use and to what extent not only the main but the subsidiary roads of the country are now used is known to most people, and the time has surely arrived when legislation is necessary to deal with their misuse by the heavier forms of locomotion. It is obvious that many roads are not suitable for the traffic which passes over them, and if this use is to be continued roads must be greatly improved to meet modern requirements. Until the advent of mechanical transport the roads that were constructed gave a reasonable measure of satisfaction under ordinary circumstances, especially as they were all the time being slowly improved, but any extraordinary use of them gave rise to serious complaint and often led to litigation; the gradual improvement which was all the time taking place would no doubt have satisfied most people but for the enormous increase in motor traffic, which converted what was a local to a national problem and completely revolutionised the methods of construction. To what extent the problem has altered is shown in the preface to the useful and instructive book before us, the second edition of which has just appeared:—

"Our acquaintance with modern traffic conditions has been comparatively brief, but it has been sufficient to show that the solution of the road problem is not to be found in improving or reconstructing roads on the old lines, but in the construction of a type of road more suited to the weight and speed of the traffic, and in the endeavour to find the ideal road the attention of engineers is now centred on the all-concrete road. So far back as 1906 it was realised in the United States that the new conditions called for something entirely different from the roads which were adequate before the advent of motor traffic, and the fact that 30,000 miles of all-concrete roads have been laid in the United States since that date is sufficient evidence that this type of road is not now a subject of experiment, but is accepted as the best, if not the only, road which will stand up to the heavy and fast vehicles of the present day. . . . Previous to 1912 there were, in the United Kingdom, no concrete roads as we understand them to-day.

The number of roads laid year by year is summarised in the following table:—

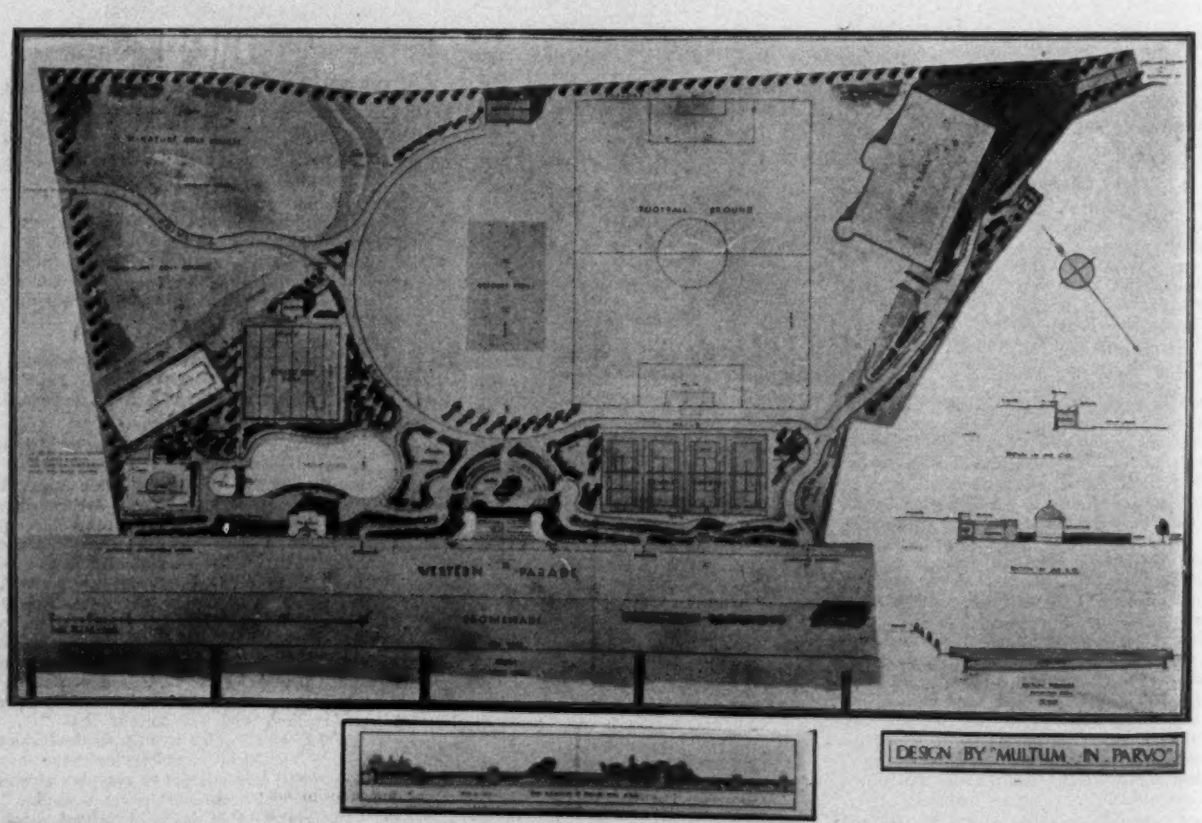
Year.	No. of roads laid in each year.	Total up to end of year.
1912 ...	1 ...	1
1913 ...	0 ...	1
1914 ...	2 ...	3
1915 ...	3 ...	6
1916 ...	3 ...	9
1917 ...	3 ...	12
1918 ...	1 ...	13
1919 ...	12 ...	25
1920 ...	35 ...	60
1921 ...	48 ...	108
1922 ...	119 ...	227
June, 1923	54 ...	281

The book before us gives a description of the concrete roads in the United Kingdom, together with a summary of the experience in this form of construction gained in Australia, Canada, New Zealand, and the United States of America. It is well arranged, and includes illustrations of many recently constructed concrete roads, and a great deal of useful information with regard to their construction and the materials and mechanical devices employed. The work has been carefully edited and compiled, and within its scope appears to exhaust the subject.

* "Concrete Roads and Their Construction." Second edition. (London: Concrete Publications, Ltd., 4, Catherine Street, Aldwych, W.C. 2. Price 5s. net.)

Self-Supporting Houses at Northampton.

The Northampton Housing Committee has, states *The Times*, succeeded in building houses for workers since the Addison scheme was discontinued which will cost the ratepayers nothing. There are three types of houses costing from £309 to £415 each, and the houses number 302. They are let at rents approximating to the pre-war rental of similar property, and show an average direct loss of £8 per house per annum. But each produces £12 10s. in rates, so that the direct loss disappears. Furthermore, the Government subsidy of about £6 per annum will be received on 180 of the houses.



Scheme for Lay-out of Recreation Ground, Western Parade, for Seaford Urban District Council. By Mr. PHILIP SHUTER, Architect.

[This design was awarded the first premium in a competition last year.]

SANITARY SURVEYS.

BY ARTHUR H. DAVIS, F.S.I., F.I.San.E., M.R.San.I

DEFINITION.—By a sanitary survey is meant (by the etymology of the words) an examination, inspection, viewing, or "looking over," for the purposes of health; or, to put it more tersely, an examination of premises and their appurtenances for the purpose of ascertaining whether all are so constructed and arranged that no detriment to healthy and clean living is possible.

IMPEDIMENTA.—Before starting on the survey it is necessary to have the impedimenta, both personal and technical, in order. In addition to notebook, pencils, &c., a five-foot rule and a tape measure will be useful. As regards technical apparatus, if it is intended to test the drains (a very important part of a survey), arrangements must be made that the smoke-testing machine, plugs, stopper-bags, rubber piping, &c., are on the spot.

METHODS OF TESTING DRAINS.—There are several methods of testing drains, including the water, olfactory, smoke, and compressed air tests, but the writer is of opinion that for underground drains the water test is the most efficient, and that the smoke test is best for vertical drains, the water test for the latter being quite unnecessarily severe.*

METHOD AND NOTE-TAKING.—In making a survey of this kind the surveyor should adopt a definite method on which all similar surveys should be conducted so far as each case allows; in other words, systemise the work and combine accuracy with speed. Further, if for any reason it should be necessary to produce the original notes in court or elsewhere a neat book shows careful work. In addition, the drafting of the report or preparation of any necessary specifications are vastly simplified.

PLAN OF DRAINS.—An authentic plan of drains is an advantage, though not necessary. To prepare a rough plan on the spot is not, of course, a difficult matter; the depths of inspection and disconnecting chambers to the invert of channels should be measured.

THE SURVEY.—It is usual to start from the outside from roof downwards, and then to inspect the interior from top floor downwards.

DESCRIPTION OF PREMISES.—First make a brief description of the premises, and state whether detached, basement house, or otherwise, business premises, &c., the materials used in the construction, and, if a house, the aspect.

STATE OF REPAIR.—Next note state of repair, if good, bad, or indifferent; and if there is any sign of settlement note if any and where.

ROOFS (EAVES).—A roof with eaves gutters can be inspected from ground level. There should be no slipped or broken slates or tiles or ridge tiles, and the pointing and cement work to chimney stacks and roof should be sound. It can be readily seen if the gutters and down-pipes are faulty by the condition of the walls.

ROOFS (PARAPET-GUTTERED).—With a parapet-guttered roof access is usually gained by a skylight or trap door. Walk all round roof. Make notes as to any defects to roof as in previous paragraph. In addition, gutters should be clean and sound, and also the flats. Copper balloons should be placed at mouths of rain-water downpipes and the soil vent pipe, and parapet walls should be in good repair. Make a note if any G.P.O. telegraph or telephone cables and wires. These are an unmitigated nuisance in every way

SKYLIGHTS, &C.—The skylight or trap-door and framework should next be inspected, as well as all lead, zinc, and glazed work and putties.

NON-APPARENT DEFECTS TO ROOFS.—Any defects to roofs, &c., not apparent to the eye on an external inspection can at once be located during the internal inspection of premises.

WALLS.—The walls should be next examined. Pointing to brickwork must be sound and joints filled; note this particularly to reveals of doors and windows. Should the surface of walls be rendered in cement this must be in order. If part of the walls is tiled or slated none of either must be broken, cracked, or missing. If walls are roughcast, carefully inspect. It more often than not hides inferior brickwork, and further it is no protection from the weather.

WOODWORK AND PAINTWORK.—Condition of all woodwork and paint should be noted, notice being taken if woodwork is defective through lack of it.

NON-BASEMENT HOUSES.—A non-basement house is all the better for a step up to enter; it is distinctly a disadvantage to be below the level of the road, especially on an incline.

PLINTHS, &C.—There should be a cement plinth about 9 in. up the wall from ground level, and also a concrete path floated in cement to falls to throw water away from the house. It is sometimes found that the cement at the junction of path and plinth is badly cracked, so that wet works its way in and defeats the object of their presence. There should be proper ventilation under floors, so look out for gratings or airbricks. It frequently is found that there is no through ventilation, owing to the fact that no air spaces have been left in the internal partition and sleeper walls. These air spaces are essential if a good through draught of fresh air is to be maintained.

FLOWER BEDS AGAINST WALLS.—A well-built house may be rendered damp in places by having flower beds right up against walls of house with no protection in the shape of cement work, tarring, or vertical slate courses. It is better still if the beds are not near walls.

BASEMENT HOUSES, DRY AREAS.—If there is a basement or semi-basement there should be a dry area all around the house; if there is one see that it is paved with impervious material, slopes away from the house, and is drained, and notice too if there is a cement plinth or three or four courses of damp-proof bricks. Should the area be narrow and closed in, note if properly ventilated by iron grating or perforated pavement light, with means of access to clean out. The earth on the far side must, of course, be supported by a retaining wall, which is best if faced with white glazed bricks. Weeps in these walls will usually be necessary.

SITE.—Do not omit, should the lowest floors be boarded ones, to have a board or two up in each room so as to ascertain whether the space thereunder is concreted, to prevent not only damp and air rising but also vermin breeding and getting into house.

MODEL AND LOCAL BY-LAWS.—Nowadays it is, of course, compulsory to concrete the whole site prior to the erection of a building under the local by-laws, but it must not be forgotten that there are an enormous number of buildings in existence which were erected before the Local Government Board (now the Ministry of Health) formulated in 1877 the "Model By-Laws," as they were empowered to do by the Public Health Act of 1875, and on which all the local councils' by-laws are based Previous to this, local authorities had certain lesser powers for making by-laws conferred on them by various Acts, but the Public Health Act, 1875, which applies to the country generally, was the sanitarians "Waterloo." London is, of course, governed by its own Acts, and the Metropolis Management Act of 1855 is the basis of its sanitary legislation. There are other subsequent Acts, the most important of which is the Public Health (London) Act, 1891. Local authorities are empowered under both Acts to make by-laws. It is interesting to note that under powers conferred by the Metropolis Management and Building Acts Amendment Act, 1878, a by-law was formulated which provides for the sites of all buildings being covered with 6 in. of concrete.

DRAIN TESTING.—During the time we have been inspecting the outside of the premises our assistants have been getting all ready for the testing of the drains. It is well to bear in mind that this testing is very important.

"INTERIOR VACUUM."—It may, however, not be out of place to remark that it is not advisable to set out on an expedition of this kind with (to put it nicely) a vacuum in one's interior, as to do so renders the surveyor far more susceptible to any ill effects likely to arise from smells.

UNDERGROUND DRAINS.—If the premises are occupied the occupants must be warned not to use apparatus until the test is completed. Then begin by testing the underground drains, the short lengths or branch drains to main drain first, and then all fittings, as the water from these will help to fill the main drain, which should be plugged at the outset and thus save time. If there are a large number of gullies and branches put a chalk mark against each as tested, so as to ensure none is missed.

AIR IN PIPES.—A piece of rubber piping must be inserted in each trap through the bend to the outlet side so that all air can escape, otherwise an air-lock will occur and the test will not be complete as the air remaining in the pipe will be under pressure, thus preventing the pipe becoming entirely filled. There are on the market specially-made patented traps (the "Ventest" yard gulley) having a removable screw vent hole at the top of the outlet side of the trap to prevent this air-lock when testing, but their use is not general.

F.A.I. AND FITTINGS.—Whilst the drains are being filled, carefully look round and see if F.A.I. is the same size as the drains, if the flap valve and grating are in order, and if all lavatory basins and sinks are disconnected from the drain and discharge into a gulley and have a puff pipe. The writer has found these discharging direct into manholes without puff pipes. By-laws under the Metropolis Management Act, 1855, say "Vent pipe not less than 4 in., but under By-law 6, under certain circumstances may be 3½ in. for a 4 in. drain; these are when soil pipes and waste pipes of slop sinks are used as outlet shafts.

GULLEYS.—Note carefully the position of down-pipes and gulleys. Especially look to see if any of the latter are in any cellar, larder, passage, or other floors. These can generally be sealed up as unnecessary, as their existence is usually forgotten, resulting in unsealing of trap and a danger and nuisance.

INSPECTING DRAINS WHEN FULL.—By this time the drains will be filled and ready for inspection. Note carefully the level of the water in each trap or manhole, and wait a few minutes to see if any subsidence and, if any, how much. If there is a subsidence make sure it is not because of a badly-fitting stopper or plug at outlet end.

HIDDEN I.C.'s.—Sometimes the I.C. at the inner end of the drains in a building cannot be found. It may be possible to locate this, if buried, by sounding with a stout stick the concrete floor near where it should be situated; it may obviate the necessity for digging. In old drainage systems I.C.'s are sometimes entirely absent.

TESTING SHORT LENGTHS.—When testing long lengths of drains, test only from manhole to manhole, and *not* in one length, also note construction of manhole, so as to allow for any absorption by bricks.

A "GOOD" DRAIN.—It may be well to note that because a drain stands the water test it is not necessarily a "good drain," because it may have too great or too little fall, or may be too large for its purpose.

VERTICAL DRAINS.—When all underground drains have been tested and the surveyor is satisfied with the results, take the smoke-testing machine and place it by the inspection chamber nearest the vertical pipes, and a ladder put up by the vent pipe, which must be blocked up, cotton waste being the usual material.

THE TEST.—A piece of cotton waste is put in the pump well of the machine and lighted; also, the short length of rubber tube from the pump is fastened to the nozzle of a drain plug and inserted in drain in I.C. The mouth of the V.P. must not, however, be blocked up until smoke issues therefrom, to ensure that the pipe is not blocked. The pump is then worked and the smoke forced into the pipe, but not so

* The Public Health Acts Amendment Act, 1907 (which deals with the country at large), specially provides for testing drains by smoke, and specifically excludes testing by water.

vigorously as to force the trap seals by undue pressure, or the test will be useless. It will soon be seen by the action of the pump if the pipes are sound, but nevertheless an inspection of pipe joints and apparatus should be made. Make sure the jointing material of all iron pipes is lead.

ONE BUILDING ORIGINALLY TWO.—It will sometimes be found that two premises originally quite separate have been altered so as to form one building. In this case it will be advisable to treat them as separate, and entirely finish one building before starting the other, or the notes may get muddled.

COMPLETION OF TESTS.—On all tests being completed make sure that no plugs, stoppers, &c., have been left in the drains, and that all apparatus, &c., is at hand. Then seal down all I.C. covers, putty, white lead, and Russian tallow mixed being the best sealing material.

INSPECTION CHAMBERS.—Notice the number of I.C.'s and their position, and if there is one at every end and at all changes of direction of drains, as this is an absolute necessity. The D.C. should be as near the sewer as reasonably possible.

INTERIOR OF I.C.—Whilst testing the drains, note construction of I.C.'s and D.C., and see that the sides above the channel pipes are well flaunched up in cement; these channel pipes must be semi-circular in section (white glazed are best) and laid on concrete.

BENDS AND JUNCTIONS.—See, too, that all bends (white glazed are best) come into the I.C. in the direction of flow, and that all changes of direction and junctions are made in an I.C.

PIPE MATERIALS.—At the same time notice the drain pipes, as if not of iron they should be of glazed stoneware.

INTERCEPTING TRAP.—The I C. nearest the sewer or cesspool should have an intercepting trap. This "I.C." is always called a D.C. There are many kinds of intercepting traps; one kind has a patent back-pressure safety stopper, but the "Winsor" is usually considered the best. It may not be out of place to mention here the great discussions there have recently been on the usefulness or otherwise of this trap, and the Report of December 22, 1911, of the Departmental Committee to the Local Government Board on "Intercepting Traps in House Drains" is interesting. At all events the best-known experts have disagreed and taken entirely opposite views. Sufficient is it for us that nearly every local authority requires it. An intercepting trap was required originally by By-laws 5 and 6 formulated under the Metropolitan Management Act, 1855, but it was first used about 1876.

COMBINED DRAINS.—Another point before we leave drains is carefully to notice whether the drainage systems of any adjoining property or properties are connected with that under survey. Under such circumstances, whether it is or is not a sewer and repairable by the local authority *is* a question both of law and fact, each case being judged on its own merits. Of course, this is entirely apart from any question as to the advisability of having a sewer vested in a local authority on private property, to which the said authority would have access at all times for all purposes.

DEFINITION OF DRAIN UNDER PUBLIC HEALTH ACT, 1875.—By Section 4, which repeals words of the earlier Act of 1848 (now repealed) "drain" is defined as meaning "any drain of, and used for the drainage of one building only or premises within the same curtilage, and made merely for the purpose of communicating therefrom with a cesspool or other like receptacle for drainage, or with a sewer into which the drainage of two or more buildings or premises occupied by different persons is conveyed. All other drains, except drains vested in, or under the control of a road authority, which is not also a local sanitary authority, are included in the term sewer."

DEFINITION OF DRAIN UNDER SECTION 250, METROPOLIS MANAGEMENT ACT, 1855.—"The word drain shall mean and include any drain of and used for drainage of one building only, or premises within the same curtilage, and merely made for the purpose of communicating with a cesspool or other receptacle for drainage, or with a sewer into which the drainage of two or more buildings or premises occupied by different persons is conveyed, *and shall also include any drain for draining any group or block of houses by a combined operation under the order of any vestry or board.*"

The words in italics show the chief difference between the law in London and in the country.

An epitome of the above is as follows: When two or more premises drain into the same drain with the consent of the local authority it is a drain, but when without its knowledge and consent it is a sewer, and therefore repairable by the local authority. Also, even when a combined drain is joined into by any person and such connection is without the knowledge or consent of the local authority, it becomes a sewer from the point of junction.

CAUSE OF DAMAGE.—Finally, if the drains are found to be damaged, endeavour to ascertain the cause, so that the same error may not be made again. They may never have been properly laid at the outset, or may be damaged by the use of too new cement (burst sockets), faulty filling of trenches, or not properly bedding pipes on length (broken pipes) too near surface of road, or carried under a non-supported wall which has settled (crushed pipes), or other defects of workmanship.

INTERNAL INSPECTION.—As regards the internal inspection of the premises, as before stated, it will at once be obvious on viewing the top floor rooms whether or not the roof is sound.

TRAP-DOOR AS FIRE ESCAPE.—If the roof has a trap-door note its utility for fire escape purposes, and the method of reaching it. There are several methods, the best being the trap-door which opens automatically by levers on the steps and lowered to floor level. Remember, too, that steps are better than ladders.

R.W. TROUGHS.—In some good-class parapet-guttered houses about fifty or sixty years old it will be found that rainwater from the front of the house is run right under the rafters in a box-like trough, zinc or lead-lined (usually zinc), which trough discharges into a rain-water down-pipe at the back of the house. Condemn this trough, as it is liable to blockage either at inlet or outlet, will overflow, and do considerable damage. Arrange that the rainwater from the front side of the roof is carried away down the front of house in 4 in. L.C.C. pattern cast-iron down-pipes with caulked lead joints and discharges over a gulley at foot.

SETTLEMENTS.—Do not omit to look for any signs of settlement in going through a house. Notice particularly ceilings and junctions of walls, as well as window and door frames. Some of the defects are often very skilfully hidden to deceive a would-be purchaser.

SMOKY CHIMNEYS.—Notice if there are any smoky chimneys, as they probably can be remedied by one or other of the patent pots and cowls.

COLD-WATER STORAGE CISTERN.—Ascertain the position of the cold-water storage cistern, and note if it is readily accessible. Make sure the cover is airtight and that there is an overflow pipe carried to the outside wall and well clear of it. The expansion pipe of the hot-water system usually discharges over this cistern. Make sure, also, that there is a separate cistern for supplying sanitary fittings apart from the main domestic supply cistern.

INTERNAL REPAIRS.—A note in general terms must, of course, be made as to the state of internal repair and decoration of the premises.

ATTICS.—The top rooms of large houses often have sloping ceilings, but do not describe them as a bedroom unless each has a proper window which opens; also if, as is very often the case, there is no chimney there should be other means of ventilation, such as a grating. In London, under the 1894 Building Act, a habitable room not in the roof must be 8 ft. 6 in. high. If the room is wholly or partially in the roof, the height must be 8 ft. throughout for not less than half the area of the room. There is no legislation as regards air space, but the minimum may be put as the minimum requirements per person for common lodging houses, viz., 400 cubic ft. per person. The Ministry of Health has now certain definite requirements which have to be fulfilled if houses are being built in order to obtain the subsidy.

BEDROOMS.—All other bedrooms should have fireplaces and good windows to ensure the proper amount of light and ventilation. Take care that the vent pipe is nowhere near a window, but see that this is carried well up above the roof. It is a growing fashion to have fitted lavatory basins in bedrooms, but if properly trapped and ventilated and with an accessible overflow there should be no nuisance, although it would be better if a bedroom were kept clear of such fittings, which in the writer's opinion are out of place there in a private house, although perhaps permissible in an hotel.

BATHROOMS.—In some houses the bath-room adjoins and opens into the principal bed-room. If this be so, there should be also a separate entrance from a landing. As regards the apartment itself, often a large sum is spent in tiling the floor and walls, or mosaic work, rubber tiling, &c., but all these, though nice, tend to make the room cold in winter. The room should be light and airy. In an ordinary house it will suffice to advise for "Emdeca" round walls, and, say, cork lino to floor, to prevent stained walls and ceilings, and to see that the bath is unenclosed and stands in a lead trapped safe.

BATHS.—As to the bath itself, condemn one which requires enamel painting, as it wears away so quickly, especially as most people turn on the hot water first. An enamelled iron roll edge bath on claw feet is quite sufficient for an ordinary house.

SHOWERS.—If there is a shower bath, have a copper rose; also, if hot and cold, note if there is a mixing box, and also a waterproof sheet to prevent splashing.

LAVATORY BASINS.—The lavatory basin, which should be quite unenclosed, is best of enamelled earthenware. Both this and the bath should have removable combined standing waste and overflow (as these can be readily removed, cleaned, and replaced) and screw-down taps, and both lavatory basin and bath should be trapped and ventilated even if only single fittings. Of course, if other fittings are found which are good they cannot be condemned wholesale because they are not the most up-to-date, and to replace is more or less expensive.

W.C.—A w.c. is often fitted in a bathroom, there is no objection to this if supplied with a riser, if the bathroom does not open into any other room, and if there is at least one other w.c. inside the house. No local authority will allow any room fitted with w.c. to open into another room; it is strictly prohibited by all by-laws.

H.-W. TANK.—In a great many houses the hot-water tank is found in the bathroom, and is often used as a linen-airing cupboard. This is an old-fashioned method of heating water, and hot-water pipes can easily be taken through a cupboard for the purpose of linen airing. This system will be referred to again later.

W.C.'S SITUATION.—The situation of the w.c.'s is important, and it is extraordinary in what insanitary places they are found, and with what antiquated fittings. The writer has come across many in City and West End premises without any window or any means of ventilation at all. One wall must be an outside wall with a proper window, at least 2 ft. square (half of which opens), also an airbrick or ventilator independent of window, as it is usually found that the window is shut at the time it should be open. If it is an outside w.c. and the floor is not of concrete, cement floated, condemn it. The floor should have a slight fall to door (the model by-laws lay down ½ in. to 1 ft. or 1 in 24), and in addition to any other ventilation the door should be cut short 3 in. top and bottom.

APPARATUS.—As regards apparatus, briefly, condemn all short and long hoppers. The "container," D trap, and pan are rarely met with now, and are, of course, disallowed by the model by-laws. Condemn also those known as the "wash out" variety, *i.e.*, those in which the trap is in front of the pan. The apparatus should be of the wash-down type with polished

rising seat, and should stand in a lead safe if the floor is not tiled or otherwise impervious floored. There should be a vent pipe on the outer side of the trap. A good w.c. pan should have a water seal of about 2½ in Of course, see that the w.w.p. cistern is in order, and that the flush pipe is not less than 1¼ in. in diameter (1½ in. is better), and is properly connected to w.c. pan. Valve closets are quite good, especially in houses only used for part of the year, as there is a double water seal to break before the apparatus becomes unsealed. A w.c. apparatus is best un-enclosed—note this when inspecting. Particularly note that the floor of a w.c. over a larder is impervious, also under the traps. The writer knows of a case where a leaky trap, undetected for some time, dripped down the walls of a larder below and a case of scarlet fever was attributed to this defect, it being believed that the milk became infected thereby.

HOUSEMAID'S SINK.—Should there be a housemaid's sink it should be arranged as far as applicable on the same principles as a lavatory basin, and the outlet should discharge over a gulley.

SLOP SINK.—A slop sink, however, should be treated as a w.c. and should discharge direct to drain. A w.w.p. cistern must be fitted over.

DAMP WALLS.—It may be found that the internal walls are damp, particularly by windows. If this be so, notice if the pointing to window reveals is sound, and that the stone or cement sill is properly weathered and throated to throw off wet and prevent it running down walls. It may be that repointing the whole of the brickwork in cement may be all that is required, but if the surveyor finds that the dampness is caused by bad bricks or construction he should make a note, in case his client decides to take the premises, of what is the best remedy to get over defects; these will of course depend on the class and locality of house.

FLOORS.—Note if the floors are level and if they unduly vibrate. The former can be cured by "firring up" the joists, the latter can be much lessened by herring-bone strutting, which stiffens and strengthens the floor.

GROUND BASEMENT FLOORS.—The ground floor or basement (if there be one) of the premises should have careful attention. It has already been mentioned (under "Site") that floors must be examined underneath to see it properly concreted; a rotten floor at once discloses absence of this, and of dampcourse. If any work should be necessary under this head it would be wise to advise a solid floor for all passages, cupboards, scullery, larder, pantry, servants' w.c., etc., even if the kitchen floor were not so treated, as some persons object to a concrete floor there on account of coldness, although a wood block floor would get over this.

KITCHEN.—If the kitchen is insufficiently lighted and ventilated, it will usually be possible greatly to improve it. Carefully inspect all walls, cupboards and skirtings to see they are all sound and that there are no holes for vermin. Observe the range and the condition and make of same. Next note the hot-water system.

HOT-WATER SYSTEM.—If the H.-W.S. is not the cylinder system, certainly advise that this be installed if a practical test shows existing system inadequate, as the cylinder system heats water quicker, and water is hotter than by any other method, there being so short a distance from the boiler to cylinder to circulate. Note the capacity of the cylinder; it should not be too large, as the larger it is the longer water takes to heat and the more fuel is used, although, of course, its capacity depends on the number of fittings in the premises. If necessary the system should be tested practically, and the time the water takes to heat noted. Coating the cylinder with asbestic cement helps to retain the heat.

SEPARATE H.-W. HEATING.—In some houses it may be found that the hot-water system is entirely separated from, or auxiliary to, the kitchen range; in fact, it is becoming quite common in good-class houses. In some cases, it is heated by gas, in some by a separate coal stove, such as the "O-Sho." The writer installed one of these latter in a boys' club with great success. Frequently also water for baths is heated by a gas geyser, either solely or in conjunction with the kitchen range.

SAFETY VALVES.—Do not omit to notice the escape or steam pipe from the hot-water system, and at its highest point, which pipe is a safety valve, though sometimes in addition a weight safety valve is put over the kitchen mantelshelf as an additional precaution, which is really quite a necessary one.

H. & C. WATER PIPES.—As regards H. & C. water pipes carried to upper floors, look round for the chase in the wall enclosed by a wood panel; this is really a necessity, otherwise if anything goes wrong a large amount of damage may be done to decorations in getting at the pipes.

SCULLERY.—The scullery is always near the kitchen. Condemn at once a stone sink as difficult to keep clean. Sinks may be, and often are, without a trap and screw eye, which is quite wrong. Both H. & C. supplies are necessary, and a draining board is useful. In a very large house a flush tank over the scullery sink is a great advantage to prevent blocking of the gulley by grease. One wall of the scullery must be an outside one on account of drainage and ventilation.

DRINKING WATER.—There should be at least one tap direct from the main for drinking and cooking purposes, and see that it is so labelled.

STOP-COCK.—Also see that the main stop-cock is labelled, so that it can easily be found in case of a burst pipe.

PANTRY.—The same remarks apply to the pantry as to the scullery, but the sink should be deeper.

LARDER.—The larder is often neglected. If the house is of any size, advise white tiled walls and slate slabs. See the ventilation is thorough, windows and door panels being covered with small-mesh stout metal screens, the door only being ventilated if the passage is airy.

SERVANTS' W.C.—The servants' W.C. should conform to the same principles as previously stated; they are, however, often found without windows and only a grating.

WALLS.—Walls of the basement should be noted as to repair and method of treatment, either tiled, painted, distempered, &c.

CELLARS.—Cellar doors should be short at the top or have holes bored in them so as to ventilate them and keep them dry.

COAL CELLARS.—Coal cellars behind kitchen ranges should be condemned, unless the walls are very thick. The writer knows of a case where lack of this precaution nearly caused a fire.

VENTILATION.—Carefully note ventilation, in basement houses especially. It is possible by enlarging existing windows or by judicious cutting into walls and making a new window or windows, &c., to make a vast improvement in ventilation and consequent dryness and freshness. In addition, the natural lighting will be improved, and this can be also assisted by glass panels in doors, &c.

DAMP AND DAMPCOURSE.—The lack of a dampcourse will at once be obvious on inspection of the ground or basement floor. The walls will be damp, the plaster broken away, the distemper blistered, or the paper bulgy and peeling

MATCH-LINED DADOES.—Be careful of a wall which has a match-lined dado, or is match-lined to ceiling. The match-lining is nailed to narrow battens, which, in turn, are fastened to wood plugs knocked into the wall. The object of this is to keep the wood away from dampness and thus to give an appearance of dryness to the room. If such a dado be found it is invariably a sign of dampness.

MATCH-LINED WALLS.—Be more careful still of a room wall which has been entirely match-boarded on the outside, and perhaps inside wall, too, and has then been papered. This is even more of a danger signal, and it is sometimes impossible to detect by the eye, especially when the skirting has been brought outside the boarding and there is a picture rail. A few sharp raps with the knuckles will, however, disclose the deception. A damp-proof course is an expensive item to put into an existing building, but that one is lacking must be reported on, both as to external and internal walls. The side of a wall which abuts directly to the earth should be carefully examined by digging away the earth to ascertain if there is a proper vertical dampcourse of, say, slates, or a 4½ in. wall with a cavity between it and main wall so that earth is kept away. See also that this hollow wall is taken above ground and the cavity properly protected by some impervious material.

DUSTBIN.—See that the dustbin is what is known as a "sanitary," circular in shape with tight-fitting lid, and that it stands in a shady position on a concrete base which slopes away from the house. Condemn a fixed dustbin, as it is impossible to empty properly, and part of the contents is dropped whilst it is being carried to the cart, whereas the circular bin can be carried intact to the cart. The model by-laws lay down that it must not exceed 2 cubic ft. in capacity. Where an ash-pit is used in common, not larger than one week's supply should be the limit of its capacity.

VENTILATION.—In an ordinary house no special provision for ventilation is necessary, except in exceptional cases, but if the surveyor sees in his tour of inspection that it can be improved anywhere he should note it in his report.

LIGHTING: NATURAL.—Natural light, *i.e.*, daylight, may be increased by additional windows, glass panels, or prism reflectors and pavement lights, especially the two last-mentioned in case of factory or business premises, and the surveyor should look out for this.

LIGHTING: ARTIFICIAL.—The artificial system of lighting in use should be noted, but beyond this it need not be considered here except to remark that from the sanitary point of view the incandescent system or electric light is the best as it does not in any way vitiate the air, which all other systems do to a more or less extent.

HEATING.—The heating arrangements should be commented on, whether coal stoves, gas, or radiators. Hot-water and steam pipes will not usually be found in ordinary houses, and need not be considered here, except to remark that under no circumstances must hot-water radiators be connected to ordinary domestic hot-water supply. Separate heating apparatus *must* be provided.

COAL.—In the writer's opinion, coal fires, in spite of the fact that they are somewhat wasteful of heat and create dust, are for ordinary houses the best, as they aid natural ventilation.

HEATING: GAS.—As regards gas, unless it is laid on the same principle as the coal fire it has the effect of drying up the moisture of the air and gives a stuffy heat which often creates drowsiness.

SMALL-CLASS PROPERTIES.

Small-class properties may perhaps be briefly dealt with. The general principles are the same as for large properties.

LIST OF DEFECTS.—In making an inspection it becomes necessary to make a list of defects, such as filthy ceilings, dirty and damaged walls, &c., and it will generally be found that the backs of the houses are in a far worse condition than the fronts.

LIST OF SANITARY DEFECTS AND SCHEDULE OF DILAPIDATIONS.—In any list of sanitary defects often a small portion only concerns the sanitary apparatus, therefore the list or schedule may become in fact an abbreviated schedule of dilapidations, so that a list of sanitary defects is a near relation to a schedule of dilapidations, only in a very much more general and abbreviated form.

HOUSING AND TOWN-PLANNING ACTS, 1909-1919.—It is perhaps proper just to mention that fine piece of legislature, the Housing and Town-Planning Act, 1909, as this has given local authorities amongst other things very greatly increased powers to inspect the artisan class of property, and to order a large amount of sanitary work to be done under penalty of a closing order if not complied with. The point that it is desired to emphasise is that these duties sometimes fall largely on the Medical Officer of Health, whose demands are often unreasonable,

as the writer can testify. There is also the later 1919 Act, which gives still greater powers to local authorities, some of whom, it is feared, are apt to abuse them by being one-sided in their attitude and in the application of the same.

SHOPS, &c.

It is surprising how badly some shops are ventilated and how inadequate is the w.c. accommodation.

W.C. ACCOMMODATION.—One example as to these will suffice. In a large shop and premises with three upper floors and ground floor shop with large workroom at rear there was only one w.c., and that in the shop and entirely closed in and unventilated.

IMPROVEMENT.—The writer, however, got over the difficulty by building two w.c.'s, both entered from the half-landings and carried on stanchions and girders. In this case, too, the skylight over the workshop was made to open in a suitable manner, and the fixed fanlights over the shop doors altered so as to drop inwards on to iron quadrant stays.

INSPECTING PRIOR TO TENANCY.—It is just as important to test drains of shops as it is of all other kinds of premises, otherwise the surveyor may be letting his clients in for trouble.

FACTORIES AND WORKSHOPS.—A building which is to be used as either a factory or workshop should be inspected on the principles as for other premises. It is not possible to say what the Factory Inspector's requirements are likely to be, each building having to be judged on its own merits, and the class of business to be carried on will, of course, affect this. The air space under the Factory Act, 1901, is: Ordinary working hours, per person 250 cu. ft.; Overtime, per person 400 cu. ft. It would be wise for the surveyor to approach the authorities with the information as to nature of the business proposed to be carried on, and the probable number and sex of employees, so that he may ascertain what their requirements are likely to be in the event of the premises being used by his client, if the building is, under the Factory and Workshops Act of 1907, what is termed an "old building," which in the case of a factory is one built before January 1, 1892, and in case of a workshop one built before January 1, 1896. Section 38 of the Public Health Act, 1891, deals with proper sanitary accommodation—nothing is stated in the Act as to the extent of the accommodation—apparently it is left to the sanitary authority to decide. Often the requirements of the "Sanitary Accommodation Order" of February 4, 1903 (of the Home Office), are taken as a basis. These are:—One sanitary convenience to every 25 females in all cases; one ditto for every 25 males of first 100 employed. For all above first 100 males, one w.c. for each 40. Where over 500 males, one w.c. for each 60. In the last two cases provided proper urinal accommodation is provided. It may be mentioned, however, that in this class of building the w.c. accommodation is often inadequate, and the bulk of what there is, is underground, and badly or entirely unventilated.

Also, there is frequently no proper provision for escape in case of fire, to roof or otherwise, and frequently there is no internal fireproof staircase or enclosure, with proper ingress and egress thereto as required by the Act. Briefly, then, the man who advises his client to take this class of premises without first conferring with the authorities as to their probable requirements, is possibly letting his client in for a great deal of trouble and expense.

POWERS OF LOCAL AUTHORITY TO ORDER WORK.—The local authority seem to be the sole judge as to what works are necessary in all cases of all kinds where they are called in. Of course, if the surveyor feels that their requirements are arbitrary he can always challenge them, and Court decisions show that the local authority is sometimes too overbearing.

COUNTRY PROPERTIES.

In surveying country properties certain points arise which do not usually occur in urban premises. These points are aspect, water supply, drainage of subsoil, sewage and refuse disposal, and lighting.

ASPECT.—The outlook of the principal living rooms should be noted.

WATER SUPPLY.—Note source of supply, whether from mains, well, or perhaps raised from a lower source by hydraulic ram. Observe the protection to source of supply, and it may in cases be necessary to have a sample of the supply analysed. The method of storage should be examined, also a provision made for storage in case of fire. This may be necessary even if the water is supplied by main, as there may not be sufficient pressure for the water to be sprayed from the fire hose to the top of the building.

SEWAGE DISPOSAL.—If there is no local sewerage system, sewage must, if the house be anything more than a cottage, be run into a cesspool or treated bacterially, and the latter system is undoubtedly preferable.

CESSPOOL.—If a cesspool is used, carefully note its construction, as it must be sound. Briefly, the cesspool should conform to the following requirements: at least, 50 ft. from house; 60 ft. from well; constructed in 9 in. brickwork; cement rendered on inside and puddled with clay 9 ins. thick at back. It must be roofed over and have an F.A.I. and a manhole cover for inspection, and the cesspool must be in such a position that its contents may be removed without passing through any building. Condemn an overflow as an unmitigated nuisance. In London: 100 ft. from any well, domestic building or public building, or any building in which a person is employed in manufacture, trade or business.—(By-laws under P.H.A., 1891.)

RAINWATER.—Note how rainwater from the roof and paved surfaces is dealt with. In the case of a cesspool, drainage could be either run into a soakaway or into tanks. If the latter, it could be utilised for domestic purposes, such as laundry work, carriage or motor cleaning, &c., an important factor if water is obtained by other sources than a company's main, and even then it would make a large difference in cost.

BACTERIA BEDS.—The best thing to do here is to take samples of the effluent and send them to be analysed. If not satisfactory, the bacterial filter beds will probably be at fault, but the system should be examined by an expert on the bacterial treatment of sewage, who will be better able to advise how to remedy any defects. *Note.*—The usual custom is only to run over land, and therefore there is no need to analyse the effluent if discharged into a running stream.

DISPOSAL OF HOUSE REFUSE.—If the premises are large, advise for a small refuse destructor. This is the best, quickest and cleanest way of getting rid of rubbish. Residuary clinker could be used for gardens as foundation for paths, as could be unburnable materials like tins and broken bottles, or they could be buried.

DRAINAGE OF SUBSOIL.—The position of the house and its general dryness and nature of subsoil will determine whether the drainage of the subsoil will be necessary. Ascertain if clay subsoil, as this, if not drained, may cause settlements owing to the clay sliding. This is specially liable to happen on the side of a hill. A system of agricultural drains would have to be arranged for, so as to throw the water away from the house. If the house should be on the slope of a hill of clay subsoil, a more than ordinarily wide dry area must be arranged for.

EARTH CLOSETS.—The writer has not had the good fortune to make a report on a building where earth closets are in vogue. They must not be passed, however, without a word. The construction of the closet should be as for a water closet. There are several kinds of earth closets in use, but Moule's earth closet is considered the best.

REPORT.—A word as to the report. Every surveyor has probably his own pet method of compiling a report, but whatever this may be it should be concise and uninvolved, and not a jumble of words and sentences unspaced and unparagraphed. A properly drawn up report will greatly help in the preparation of any necessary specifications of alterations, repairs, and decoration, and makes very much more pleasant and easy reading.

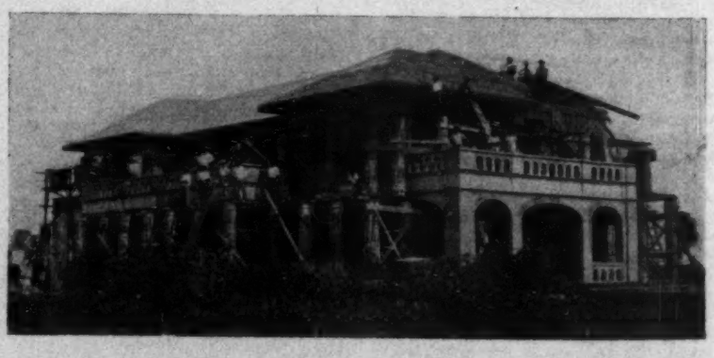
Repairing Drains from Inside.

The following is a method of repairing underground drains which obviates the necessity for digging down, removing, and entirely relaying existing drains, with the consequent loss of time and inconvenience and expense. Its use is, of course, not applicable to every case.

Any pipe drain of whatever size can be made watertight with a machine without taking up ground flooring, tiling or mosaic paving. The machine consists of two rubber rings on wood or metal discs working on a rod, which is either solid or flexible, the latter to allow the machine to be used where there are bends in the drain. From the inspection and/or disconnecting chambers at either end of drain a cord is passed through the drain to which the machine is attached, and it is worked backwards and forwards until all interstices are filled up with cement and the pipes are made sound. The internal surface of the pipes is afterwards cleaned with the machine, so that a smooth surface is left inside, no cement protruding to cause stoppage, which stoppage may occur by bad workmanship when drains are relaid in the usual manner. If a looking glass were placed at one end of the drain when finished all the joints could be seen perfectly smooth as though they had been trowelled.

Should a branch drain be connected to the main it is necessary to open at that point, as the machine when passing the opening would entirely seal it up. To avoid this a plunger is forced into the main every time the machine passes.

The *modus operandi* is as follows: The internal surface of the drain is thoroughly cleansed and disinfected with acid, and the machine inserted; semi-solid cement is then placed between the discs, and the pressure exerted by the ropes pulling it through the drain is sufficient to force the cement into interstices as stated above, and make it watertight. The process of pulling the disc and cement through the drain is carried out from both ends, and is continued until it is obvious by the amount of cement left after a certain number of operations, that all interstices and spaces have been entirely filled.



New Residency for the Chief Commissioner of Ashanti, Coomassie.

This building is constructed of 9 in. concrete blocks. The contractors are the General Engineering and Construction Co., Ltd., of Tarquah.

THE BUILDING TRADE.

THE RENT ACTS: INCREASE OF RENT.

A CASE tried in the County Court at Folkestone is briefly reported in *The Times* for September 11; we could wish that the report was more extended as the case was stated to be in the nature of a test case on which other cases depended, and costs were awarded on the higher scale to the defendant on the ground that difficult and novel points of law were involved.

The house in question was one of several built by the Strood Rural Council in 1916, when it had been let to the defendant on a weekly tenancy at a rent of 6s. 9d., the Council paying the rates. On December 10, 1920, the Council had given a notice to increase the rent, and again in June, 1921, a similar notice had been given, but no notice to quit had been given in connection with either of these notices to increase the rent. On January 31, 1923, the Council had given the defendant notice to quit expiring on February 12, and apparently subsequently a third notice to increase the rent had been given on June 20.

The report does not state how the notices of increase were made up or how far they had ever been acted upon, but from the report of the judgment it appears some question as to rates must have been raised, as this passage occurs: "The admitted transfer of the burden of the rates to the tenant not being accompanied by a reduction in rent was therefore invalid, and the notice to increase was, in the judge's opinion, bad."

The plaintiffs appear to have been claiming that there were 29 weeks' rent due at 7s. 5d. a week. The defendants counterclaimed for £20 3s. 10½d. rent paid in excess. The Court appears to have held that the first two notices were misleading and inaccurate, and refused to amend them; that all three notices to increase the rent were invalid; and to have given judgment for the defendants for £9 7s. 10d. on the counterclaim, the deduction from the counterclaim being made up of the standard rent at 6s. 9d. a week in arrear from December 11.

The case is difficult to follow on this brief report. The first two notices to increase the rent would, of course, be bad in the absence of a notice to quit, as at that time this was essential under the decision Kerr *v.* Bryde. (See *The Builder*, November 17, 1922, and January 26, 1923.) The notice to quit given on January 31, 1923, would not operate to make these former notices of increase regular (see Peizer *v.* Federman, *The Builder*, December 16, 1921), for the notices of increase would bear a wrong date. The third notice of increase given five months after the date of the notice to quit might in certain circumstances be good; the report is not specific enough to enable us to say what was the defect in it, but the figures indicate that a very small period, if any, could be in question after this notice became operative.

It may be useful in the abstract, and quite apart from this case, to consider how the Notices of Increase Act, which came into force on June 7, would bear on such points in future. Section 1 subsection (1) provides: "Where notice of intention to increase rent has, whether before or after the passing of this Act, been served on a tenant in conformity with section 3 subsection (2) of the principal Act, and a notice to terminate the tenancy was necessary in order to make such increase effective, the notice of intention to increase the rent shall have effect, and shall be deemed always to have had effect, as if it were or had been also a notice to terminate the existing tenancy on the day immediately preceding the day as from which the increase is or was first to take effect or on the earliest day thereafter on which if it had been a notice to terminate the tenancy it would have been effective for that purpose, and in the latter case a notice of increase served before the passing of this Act shall be deemed to have had effect as if such earliest date had been specified in the notice as the date from which the increase was to take effect."

This subsection at first sight seems unlimited in its retrospective effect, but that is not the case, for by proviso (*a*) it is provided that "nothing in this Act shall entitle a landlord after the passing of this Act to recover from a tenant in respect of any period before December 1, 1922, the increase of rent made valid by this Act, or any sums which have been recovered from the landlord before that date by means of deductions from rent or otherwise, or any rent due before that date which has not been paid by reason of such deductions having been made therefrom, but section 14 subsection (1) of the principal Act shall not apply to an increase of rent made valid by this Act which was paid by or recovered from a tenant prior to December 1, 1922." This subsection made any sum paid on account of rent which was in law irrecoverable by the landlord recoverable by the tenant by deduction from rent or otherwise.

It will be seen, therefore, that under the above subsection, a notice to increase rent now operates as a notice to determine the tenancy as from the earliest legal date, but that where this procedure is adopted in place of a regular notice to quit December 1, 1922, is made the date from which all adjustments between the parties as to rent must be made, and validated increases under this Act are also subject to all the other provisions of the Act, such as payments by instalments and questions as to the condition of the premises, &c.

BOOK-KEEPING AND ACCOUNTS.*

THIS book appears to deal with the subject of book-keeping and accounts, as set forth in its "Contents," in a very thorough and concise style, not over-elaborate, but condensed in a clear and lucid manner. Its illustrations of different types of accounts are clearly set out and one can quite understand it would be found most useful to the student about to take up studies for secretarial or auditorial professional work.

Its various chapters on Income Tax, Company Accounts, &c., should also prove of assistance to the company director for reference on doubtful points which constantly arise in the course of business, but possibly more especially to the company secretary, who is often called upon at a moment's notice for advice on some technical point regarding company accounts, although if he be a wise man he usually refers it to his accountants to deal with. One notices a special chapter given to builders' and contractors' accounts on page 172, presumably because these are traders whose accounts are more complicated than other merchants, and more often worse kept. In a book of this kind the writer can, of course, only deal in a summarised manner from a purely book-keeping point of view with such a highly technical business, in which costing accounts are so important and must be worked in conjunction with the financial books, and the criticisms of this chapter must be read bearing in mind this preliminary note.

In passing one cannot help noticing the happy state of affairs of one "John Brown," as illustrated, a builder, at 31st December, 1901, with work in progress value £1,000, £3,500 bank balance and no liabilities. And pre-war, too! With regard to time sheet, a different form is as below, and is found more useful, as it obviates the necessity of repeating the name of contract each day:—

Contract.	Nature of work	Materials used.	S	M	T	W	T	F	Hours Total.
Jones ..	Daywork	—	5		4		3		12
Bell ..	—	—		2	5		6		13

The wages book should show a column for transfers, *i.e.*, time worked on other or outside contracts, also for expenses or extras, as well as deductions, also columns for State Insurance, Employers' and Employees' Contributions for Health and Unemployment. The Prime Cost ledger rulings as shown would possibly give the contractor a total P.C. of his contract; it all depends upon the inclusive nature of the "Sundries" item, but such headings as "Sundries" for a complete P.C. would have to be eliminated, and each contract would have to take its share in detail of "on cost" charges, such as machinery, garage or transport charges, plant hire, and percentage for trade expenses, and so forth.

The Purchase Analysis book, worked in conjunction with the Stock Book, Contract P.C., and Day Book is a necessary book, but in a large firm it would be impossible to classify every invoice in the manner shown and the amounts of accounts only would answer the same purpose, but amplified to include purchases for plant, machinery, garage, trade expenses, &c.

* *Johnson's Book-keeping and Accounts, with Notes on Auditing, &c.* By George Johnson, F.L.A.A., F.C.I.S. (London: Effingham Wilson, 16, Copthall-avenue, E.C.2.) Price 10s. 6d. net.

THRIFT SCHEMES IN INDUSTRY.

SIR WILLIAM SCHOOLING, vice-chairman of the National Savings Committee, speaking on "Thrift Schemes in Industry," at the Industrial Welfare Conference at Oxford on Monday, said that if industry would co-operate to the fullest possible extent in encouraging thrift it would do much more for the welfare of the community and the well-being of the individual than legislation. The best opinion on the whole was that there was no moral obligation on the employer to provide for the old age of his workers, but there was some moral obligation to pay employees at such a rate as would enable them to make provision for themselves and to facilitate the making of that provision by encouraging concerted action among the employees. Superannuation funds should not be started without the best actuarial advice. Endowment schemes under which a year's salary was paid on the death of the employee had "caught on" to a surprising extent in America. A disadvantage of such schemes was that they made no provision for superannuation.

New School at Durham.

The Durham County Council Education Department are inviting tenders for the erection of a new school to accommodate 242 scholars at Kirk Merrington.

Staff Convention.

In the course of his address of welcome to the recent Convention of Messrs. Robt. Ingham Clark & Co., Ltd., varnish and enamel manufacturers, of West Ham Abbey, E.15, Mr. R. F. Clark referred to the "Paint more, save more" campaign in the newspapers early this year, and appealed for further co-operation in this movement.

During the Convention papers were read by Mr. F. S. Evans on "Comparison of Selling at Home and Abroad"; by Mr. E. P. Frake Walters on "The Merchant: the Medium between Manufacturer and Consumer"; by Mr. F. W. Jefferson on "Architects in Relation to the Consumer"; and Mr. F. M. Jordan on "The Effect of Advertising on the Merchants' Sales."

DESIGN AND LAY-OUT OF MOTOR GARAGES.

In dealing with the design and lay-out of garages, the writer has endeavoured to present the subject in such a manner as to interest architectural and constructional experts, who, in the drawing up of plans for this particular class of building, are unable to discover any specialised information on the subject in current technical literature.

Garages, both for private and public use, must possess special features which, unless incorporated in the design and construction, will limit the efficiency and convenience of the finished buildings. Therefore, the main object of this article will be to consider the design and lay-out of several classes of garage from the view-point of their prospective users, and to offer such suggestions as may prove of value to architects and builders who are called upon to undertake the actual design and construction.

Notwithstanding the ever-increasing use of motor vehicles and the consequent development of the public garaging and repairing industry, those most closely associated with the trade appear to have devoted but little attention to the design of the buildings in which their activities are carried out. Many promising undertakings in the motor business have produced disappointing results, not because the patronage of clients was withheld, or by reasons of inefficient technical staffs, but simply on account of endeavouring to conduct the business in inadequate or unsuitable premises. The latter fact is so well-known that persons accustomed to efficiency organisation in various forms have often commented upon the ability of some motor garage firms to keep their heads above water at all.

One of the principal difficulties in preparing garage designs is found in the fact that the individuals in need of the buildings are not fully conversant with their requirements; and, as a garage suitable for one client may be altogether useless for another, it becomes desirable for the architect to be in the position of acting as a consultant in this particular direction.

With this guiding principle in view, let us proceed to consider the special requirements of various classes of garage users and evolve plans whereby such requirements can be met.

Owners of private houses to which stabling is attached usually make use of the outbuildings as garages, until such times as they are unable to endure the inconvenience any longer, and the old building is demolished for the purpose of erecting one of a more suitable description. Coach-houses which were quite satisfactory for their intended purposes when they came under the control of a paid servant, fail in many respects when used by modern motorists, of whom the larger proportion consists of owner-drivers. Not only does this class of motor owner drive his own car, but, in the interests of economy, attends to its upkeep and maintenance in addition, the latter factor having a very important influence upon the design of the building, as we shall proceed to demonstrate.

Whilst some motorists are content to look upon the private garage as a kind of glorified bicycle shed, of sufficient dimensions to house their cars, others insist that the building shall conform with the architectural features of the residence to which it is attached, which immediately raises the matter of garage construction from mediocrity to a subject of artistic interest. The architect's skill will enable him to produce designs calculated to dignify a class of structure which too often consists of three bare and window-less walls, an uglier roof, and an ungainly entrance.

The site selected for the garage is of greater importance than is often realised, especially where owner-drivers are concerned. Its relation to the front door of the residence, its accessibility from the road without involving alterations to the front garden, the convenience of its connection with supplies of water, gas and electric light from the house, and ease of access for the owner for the purpose of effecting car adjustments, are all matters which have to be considered in determining the position selected for the site, and bear a close connection with the cost of preparing the building for service.

For example, to the cost of erecting the garage, that of making up a roadway from the street to its entrance has to be considered, for, even in cases where a carriage drive already exists, the surface of the latter almost invariably fails to withstand the continual starting and stopping of a motor car, the studded tyres of which are inclined to tear up any but the most closely consolidated of road surfaces.

As a general rule private garages are far too small to be utilised to the greatest advantage, especially when required for the use of owner-drivers. The idea of limiting the first cost of the building is usually responsible for this kind of mistake on the part of the owner, for whilst the proposed structure need not possess the characteristics of a miniature repair establishment, it is certainly a mistaken policy to limit the dimensions so that the acquisition of a more powerful car at a later date will necessitate radical structural alterations to the building. The man who commences motoring with a small two-seater car may never aspire to the possession of a six-cylinder limousine and, in consequence, will never build a very pretentious garage; but in the course of a couple of seasons he will probably acquire a medium powered four-seater, and as the difference in the overall dimensions of the latter do not differ very greatly from those of the two-seater, he will be well advised to allow for the possible expansion of his ideas on motoring in determining the area to be occupied by the garage.

Taking the average wheel base of a typical car of medium power at 9 ft., and allowing an additional length of 3 ft. 6 in. to clear the wheels and wings, with an overall width of 5 ft. 6 in., we arrive at the floor space actually covered by the car. A space of at least 3 ft. should be allowed at either side of the car, whilst the length of the garage should exceed that of the car by 5 ft. Between the garage door and the rear of the car there should be a space of 12 in., leaving sufficient room for a work bench at the opposite end. In passing, it may be mentioned that the full specifications for the proposed building should include all internal fittings, such as benches, cupboards, tool racks, and other objects required by the motorists.

Whether the owner-driver intends to perform the operation of washing the car himself or to employ someone else for the purpose, adequate provision for the process must be made when designing the garage. Cars cannot be washed properly in the private garage, whilst the inconvenience of having this work done regularly at the local garage justifies the allocation of a space for a car wash. The area required will be approximately the same as covered by the garage and may occupy a convenient space in front of the building. A glazed roof above the wash adds to its usefulness, for besides serving as a shelter from inclement weather during washing operations, it will act as a convenient place for standing the car for short periods without making use of the garage.

The surface of the washing area should have a slight fall from each direction with suitable gulleys communicating with a central drain, and provisions for a mud and grease trap. A concrete base covered with cement and granite chips forms a very good flooring for the garage and surface for the wash. Most forms of surface with an asphalte base should be avoided owing to their susceptibility to the action of grease.

A water supply should be led to the wash and a convenient stand pipe arranged for a hose connection.

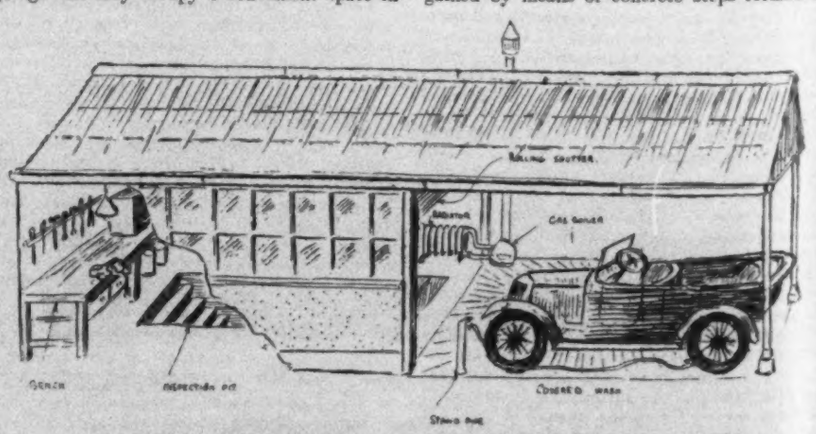
As it is impossible to give the necessary attention to a car when housed in a dark garage, particular care should be paid to providing plenty of natural light when designing the building. Roof lights undoubtedly form the best means of attaining this end, but in any case the lightest side of the garage should consist largely of windows, especially when it is intended to build an inspection pit, for obviously the car standing over the pit shuts out most of the light from beneath.

The interior should also be wired for electric light, where a supply of electricity is available, and in addition to arranging the points in convenient positions to shed light on the bench and over the car, one should be provided in the inspection pit, so that straggling leads from portable hand-lamps may be avoided. If a power circuit is available the current may be used for electric radiators for heating the interior of the garage, but otherwise the best form of heating consists of employing hot-water radiators, which are supplied from a small gas-boiler situated just outside the garage.

Although an inspection pit is not an absolute necessity in the private motorist's garage, the convenience it provides is well worth the expense entailed by its construction. The lubrication of cars, even of modern design, is not always too easily done from above, whilst most motorists who take a keen interest in the mechanism of their cars like to make periodical inspections and effect small adjustments with the object of ensuring safety and keeping down repair bills.

The inspection pit should be excavated to a depth of 4 ft., and have a width of 3 ft. 6 in., both sides and bottom being finished off in concrete with a smooth surface of cement. By finishing off the corners with a radius it is possible to keep the pit clean, a drain and grease trap being required for the same purpose.

A ledge formed all round the top of the pit will be required to support flush fitting boards, used as a covering when it is not in use, and a further convenience consists of a shelf extending from one end to the other and about twelve inches wide, which serves to carry tools and cleaning material whilst work is in progress beneath the chassis. Access to the pit may be gained by means of concrete steps formed at



Sketch Showing Main Features of a Private Garage.

the end farthest from the garage door, which is preferable to the use of a removable wooden ladder.

As a rule the private motorist does not require to stock large quantities of petrol and oil, but, even though the supply consist of but a few gallons, the inflammable materials must be stored with due regard to regulations and fire risks. The best plan for such storage is to construct a small pit occupying a corner of the covered wash, in which from ten to twenty two-gallon tins of petrol, together with a small reserve of lubricating oil, can be kept.

This pit should have a watertight covering fitted over a ledge rising about six inches above the surface of the wash, so that there is no risk of water dripping into the petrol store. The suggested method of petrol storage is absolutely safe and its position is very convenient for filling the tank of the car preparatory to a journey.

Owing to the restricted space usually available for private garage buildings, the advantages of the rolling shutter type of door above those of the hinged variety become very obvious, and, therefore, this feature is one that should be incorporated in the design wherever possible, especially as very little extra expense is entailed.

Proposed New Severn Railway Bridge.

At a conference of public authorities of South Wales at Chepstow to consider improved means of transport between South Wales and London, the Midlands and West of England, it was stated that the Great Western Railway Co. intended to erect a bridge across the River Severn at Beachley in order to relieve congestion at the Severn Tunnel. It was suggested that a road bridge should be constructed near the same points simultaneously and that an effort should be made to get Government assistance. The bridge would shorten the distance between the points mentioned by 70 miles, as all road traffic from South Wales has to proceed via Gloucester to London.

Building Trades' Courses.

The courses in building trades' subjects at the Acton and Chiswick Polytechnic, Bath-road, Chiswick, commence on September 24. A full programme will be forwarded on application to the principal, Mr. V. C. Egerton.

Assessment of Flats.

Mr. E. C. Christmas, builder, of Forest Hill, S.E., writing in *The Times* last week, says:—"I bought three houses and converted them into sixteen flats. The net assessment as houses was £147, and as flats £588. The cubic contents were not increased, and 75 per cent. of the gardens was taken away, so it seems to me that all that private enterprise is doing, by converting these houses, is to create a large income for the public authorities."

An Old Painter's Death.

After working for the same firm for over forty years, Thomas Lord Eldridge, aged 74, of 28, Templar-road, Homerton, collapsed while painting a scullery door at 7, Fenn-street, and died in Hackney Infirmary. Deceased's employer, Mr. George Huckett, house decorator, of Homerton-row, said Eldridge ceased work in October, but as he was a very active man he could not rest, and worried because he had nothing to do. Witness therefore gave him a quiet job to occupy his mind.

The coroner remarked that it was a very good act, and showed more feeling for an old servant than one sometimes saw. He recorded a verdict of "Death from natural causes."

Anglo-Swedish Society.

The Anglo-Swedish Society, which has for its object the promotion of intercourse between the peoples of Great Britain and Sweden, held a reception at the Princes' Gallery, Piccadilly, on Tuesday last, when the members and the guests were presented to H.R.H. the Crown Prince of Sweden and Lady Louise Mountbatten. Amongst those present were a number of people who have visited the Exhibition and Town-Planning Conference in Gothenburg.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the rates of wages in the building trade in England and Wales. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers Labourers.
Aberdare	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Accrington	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Altrincham	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Ashton-under-Lyne	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Barnsley	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Barrow-in-Furness	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Barry	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Bath	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Bedford	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½			0/11½
Birkenhead	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½			1/4
Birmingham	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Bishop Auckland	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Blackburn	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Blackpool	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Bolton	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Bournemouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Bradford	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Bridgwater	1/3	1/3	1/3	1/3	1/3	1/3	1/3			0/11½
Brighton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Bristol	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Burnley	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Burton-on-Trent	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			1/1½
Bury	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Cambridge	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½			0/11½
Cardiff	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Chatham	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Chelmsford	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½			0/11½
Cheltenham	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Chester	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Chesterfield	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Colchester	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½			0/11½
Coventry	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Crewe	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			1/1½
Darlington	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Derby	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Doncaster	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Dudley	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			1/1½
Durham	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
E. Glam. (Mon. Vall.)	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Eastbourne	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Exeter	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½			1/0½
Folkestone	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½			0/11½
Gloucester	1/4	1/4	1/4	1/4	1/4	1/4	1/3			1/0
Grantham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			1/1½
Grays	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½			1/2½
Grimsby	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Great Yarmouth	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½			0/11½
Guildford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Halifax	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Harrogate	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Hartlepools	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Hastings	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½			0/11½
Hereford	1/4	1/4	1/4	1/4	1/4	1/4	1/3			1/0
Huddersfield	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Hull	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Ipswich	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½			0/11½
Lancaster	1/6	1/6	1/6	1/6	1/6	1/6	1/6			1/1½
Leamington Spa	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			1/1½
Leeds	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Leicester	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Lichfield	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			1/1½
Lincoln	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Liverpool	1/9	1/9	1/8½	1/9	1/9	1/9	1/9			1/4
Llanelly	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
London	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½			1/2½
Loughborough	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Luton	1/3½	1/3½	1/3½	1/3½	1/3½	1/5½	1/3½			0/11½
Maidstone	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Manchester	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Mansfield	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Merthyr Tydfil	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Middlesbrough	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Newcastle-on-Tyne	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Newport, Mon.	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/1½
Northampton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			1/0½
Norwich	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/2½
Nottingham	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/0
Oakham	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/2½
Oldham	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/0½
Oxford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/1½
Plymouth	1/6	1/6	1/6	1/6	1/6	1/6	1/5½			1/2½
Pontypridd	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/0½
Portsmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/2½
Preston	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/0½
Reading	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/2½
Rochdale	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/0
Rochester	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/1½
Rugby	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			0/11½
St. Albans	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½			1/2½
St. Helen's	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/1½
Scarborough	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			1/2½
Sheffield	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/1½
Shrewsbury	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			1/0½
Southampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Southend-on-Sea	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/2½
Southport	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
South Shields	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Stockport	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Stockton-on-Tees	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Stoke-on-Trent	1/7	1/7	1/7	1/7	1/7	1/7	1/7			0/11½
Stroud	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3			1/2½
Sunderland	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Swansea	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/0
Swindon	1/4	1/4	1/4	1/4	1/4	1/4	1/3			0/11½
Taunton	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½			1/0½
Torquay	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Tunbridge Wells	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Wakefield	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Walsall	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			1/1½
Warrington	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
West Bromwich	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/2½
Wigan	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/0½
Windsor	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/2½
Wolverhampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7			1/1½
Worcester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			1/1½
York	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½			1/1½

(For rates of wages in the Building Trade in Scotland, see page 464.)

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

SEPTEMBER 24.—**Aldershot.**—W.D. WORKS CONTRACT.—For the works contract for repairs and materials, from October 6, 1923, at North Aldershot Station, including Marlborough Lines, Pinehurst and Mytchett. Commanding Royal Engineer, R.E. Office, Marlborough Lines, North Aldershot, Hants.

SEPTEMBER 24.—**Ansdell.**—SCHOOL.—For a new Sunday School, for the Baptist Church, Ansdell. Mr. Fred. Harrison, architect, 30, Willow-street, Accrington. Deposit £2.

SEPTEMBER 24.—**Barnsley.**—HOUSES.—Erection of 44 houses, for the T.C. Borough Engineer, Fairfield House Offices, Barnsley.

SEPTEMBER 24.—**Dalton.**—STORAGE PITS.—Construction of benzole storage pits, for the Dalton Chemical Works. Messrs. Abbey & Hanson, civil engineers, 11, Cloth Hall-street, Huddersfield.

SEPTEMBER 24.—**Downderry.**—HOUSE.—Erection of a residence at Seaton, near Downderry, Cornwall, for Mr. G. S. Sneyd. Mr. C. W. Parkes Lees, architect, Fowey, Cornwall. Deposit £2 2s.

SEPTEMBER 24.—**Eccles.**—CONVENIENCES, &c.—(1) Erection of waiting-rooms and conveniences, Liverpool-road, Peel Green, and (2) erection of a ladies' convenience in Regent-street, for the T.C. Borough Engineer, Town Hall, Eccles.

SEPTEMBER 24.—**Hebden Bridge.**—HOUSES, &c.—Erection of 12 scullery type houses in blocks of two; supply of about 383 yards of 3 in. cast-iron water pipes, &c.; laying and jointing (including excavation) pipes; and street-making and laying of sewers. Mr. H. L. Bottomley, Engineer and Surveyor, Council Offices, Hebden Bridge. Deposit £1 1s.

SEPTEMBER 24.—**Inverkeithing.**—HOUSES.—Erection of ten houses of the second development at Spencerfield site, for the T.C. Mr. Peter Reid, architect, Park House, Inverkeithing. Deposit £1 1s.

SEPTEMBER 24.—**Leeds.**—FENCE, &c.—For erecting a boarded fence and extensions to the stables, &c., at the Institution of the Board of Guardians. Mr. James H. Ford, Clerk, Poor Law Offices, South Parade, Leeds.

SEPTEMBER 24.—**North Berwick.**—ALTERATIONS.—For alterations to buildings at Market-place, North Berwick, for the Haddington Co-operative Society. Mr. Thos. Deans, General Manager, Lodge-street, Haddington.

SEPTEMBER 24.—**Tyseley.**—HOUSES.—For the erection of 44 parlour type houses, Mayfield-road, for City of Birmingham. Mr. Herbert H. Humphries, M.Inst. C.E., City Engineer and Surveyor, The Council House, Birmingham. Deposit £1.

SEPTEMBER 24.—**Warrington.**—PAINTING.—For external and internal painting of various properties, Sankey-street, for the T.C. Mr. Andrew M. Ker, Borough Engineer, Warrington.

SEPTEMBER 24.—**Watchet.**—QUAY BUILDING, &c.—For construction of certain works, including building of a concrete quay, sheeting and bulkhead walls, for the improvement of Watchet Harbour. Mr. Frank Risdon, Clerk, U.D.C. Offices, Watchet.

SEPTEMBER 24.—**Workington.**—HOUSES.—Erection of 24 houses, drainage, &c., for the T.C. Mr. H. B. Williams, Borough Engineer, Town Hall, Workington. Deposit £2 2s.

SEPTEMBER 25.—**Auckland.**—HOUSES.—Erection of 46 houses at Lecholme Coundon, for the R.D.C. Mr. Charles Heslop, Architect, Fleet-street, Bishop Auckland.

SEPTEMBER 25.—**Bedwellty.**—REPAIRS, &c.—For repairs and painting at the Children's Homes at Tredegar, Blackwood and Ebbw Vale, for the Board of Guardians. Mr. W. Hall, Clerk, Union Offices, Tredegar, Mon.

SEPTEMBER 25.—**Brighton.**—SORTING OFFICE, &c.—For the completion of Brighton Sorting Office and Telephone Exchange, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

SEPTEMBER 25.—**Bristol.**—NURSES' HOME.—Extension of the Nurses' Home, for the Committee of the Bristol Royal Infirmary. Messrs. Bernard & Son, quantity surveyors, 26, Orchard-street, Bristol. Deposit £2 2s.

SEPTEMBER 25.—**Chepstow.**—CONVERSION.—For conversion of "Larkfield," Chepstow, into a public elementary central school, for the Monmouthshire Education Committee. Mr. John Bain, F.R.I.B.A., County Hall, Newport, Mon.

SEPTEMBER 25.—**Conway.**—SCHOOLS.—Erection of new Council Schools at Conway and Llanrug, near Carnarvon, for the C.C. Mr. Rowland Lloyd Jones, County Architect, 14, Market-street, Carnarvon.

SEPTEMBER 25.—**East Molesey.**—HOUSES.—Erection of six houses at Hurst-lane, East Molesey, in pairs (cost not exceeding £900 per pair), for the East and West Molesey U.D.C. Chairman of the Housing Committee, Council Offices, East Molesey.

SEPTEMBER 25.—**Fence Houses.**—PAINTING.—For painting Lambton Miners' Hall. Mr. G. Garland, North House, Fence Houses.

SEPTEMBER 25.—**Glasgow.**—EXTENSION OF TIME.—For the several works in connection with the Glasgow Knightswood Housing scheme. (Time extended to September 28). Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

SEPTEMBER 25.—**Liverpool.**—CONVENIENCES.—Erection of conveniences in Sefton Park, for the T.C. Land Steward, Municipal Offices, Liverpool.

SEPTEMBER 25.—**Maldons and Coombe.**—CONVENIENCE, &c.—Erection of public convenience, boundary walls, &c., for the U.D.C. Mr. R. H. Jeffes, Surveyor, Council Offices, New Malden. Deposit £2 2s.

SEPTEMBER 25.—**Oxted.**—COTTAGES.—Erection of 16 cottages, for Mr. F. Down. Mr. J. Shelley Cowdrey, Oak Bank, Oxted.

SEPTEMBER 25.—**Sheffield.**—VARIOUS WORKS.—(1) Passenger shelter, Manchester-road Bus Terminus; (2) Public conveniences, Abbey-lane, Woodseats; (3) Internal and external painting, Fitzalan Market, for the T.C. Mr. F. E. P. Edwards, City Architect, Town Hall, Sheffield.

SEPTEMBER 25.—**Teddington.**—EXTENSION.—Extension of the Admiralty Research Laboratory, National Physical Laboratory, Teddington, for H.M. Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, S.W.1. Deposit £1 1s.

SEPTEMBER 25.—**Wallsend.**—HOUSES OR FLATS.—Erection of 72 self-contained houses, with alternative tenders for the erection in lieu thereof of 144 flats, for the T.C. Borough Surveyor, Town Hall, Wallsend. Deposit £2 2s.

SEPTEMBER 25.—**Warrington.**—PAINTING.—Painting interior of the school buildings at the Cottage Homes, Padgate, for the Board of Guardians. Mr. F. J. Barnish, architect, Golden-square, Warrington. Deposit £1 1s.

SEPTEMBER 26.—**Cudworth.**—PAINTING.—For painting at the Albert Working Men's Club and Institute, Ltd., Pontefract-road, Cudworth, near Barnsley. Mr. J. R. Collins, Secretary, The Club, Cudworth.

SEPTEMBER 26.—**Herne Bay.**—SHELTER, &c.—For the erection of the superstructure of the proposed shelter and conveniences, West Cliff, on a prepared substructure, for the U.D.C. Mr. B. J. Wormleighton, F.S.I., Engineer and Surveyor to the Council, Town Hall, Herne Bay. Deposit £2 2s.

SEPTEMBER 26.—**Wavertree.**—RELIEF OFFICE.—For new relief office, &c., High-street, Wavertree, for the West Derby B.G. Mr. Ernest B. Bailey, F.S.I., architect, 9, Cook-street, Liverpool. Deposit £2 2s.

SEPTEMBER 26.—**York.**—ALTERATIONS.—For alterations to the old Subscription Library, for the T.C. Mr. F. W. Spurr, City Engineer, Guildhall, York. Deposit £1 1s.

SEPTEMBER 27.—**Aberaman.**—EXTENSION.—Conversion of the Lucania Building, Aberaman, into a lecture hall, for the Aberaman Hall and Institute Committee. Mr. R. H. Willson, architect, Aberaman, Aberdare. Deposit £3 3s.

SEPTEMBER 27.—**Mallow.**—REBUILDING.—For rebuilding portion of Mallow Station, for the Great Southern & Western Railway Co. Chief Engineer, Inchicore. Deposit £1 1s.

SEPTEMBER 27.—**Oadby.**—HOUSES.—Erection of two houses, for the U.D.C. Mr. G. E. Fryer, Council Offices, Oadby. Deposit £5 5s.

SEPTEMBER 27.—**Preston.**—PAINTING.—For the painting and decoration of the inside of Ribchester Institution, for the B.G. Mr. Thomas H. Bentham, Clerk, Union Offices, Preston.

SEPTEMBER 27.—**Tuam (Ireland).**—CONVENT.—Erection of a new wing to the Presentation Convent, Tuam, co. Galway. Mr. R. M. Butler, architect, 23, Kildare-street, Dublin.

*SEPTEMBER 27.—**Tunbridge Wells.**—BUNGALOW HOUSES.—Erection of seven bungalow houses at High-street, Rusthall, Tunbridge Wells, for the Trustees of the Molyneux Almshouses, Tunbridge Wells. Mr. Alex. R. Cheale, 3, The Priory, Church-road, Tunbridge Wells. Deposit £1 1s.

SEPTEMBER 28.—**Bristol.**—HOUSES.—Erection of houses: Fishponds Housing site (30 houses), Knowle Housing site (20 houses), for the T.C. City Engineer, Housing Department, 51, Prince-street, Bristol. Deposit £1.

SEPTEMBER 28.—**Burton-upon-Trent.**—BRIDGE.—Erection of a small footbridge in ferro-concrete on the Hennebique system over the Silver Way branch of the River Trent, for the T.C. Mr. George T. Lynam, Borough Engineer, Town Hall, Burton-upon-Trent.

SEPTEMBER 28.—**Durham.**—PAINTING.—For painting of the interior of the Girls' Home, 8, Church-street, for the Board of Guardians. Mr. H. E. Ferens, Clerk, 25, Market-place, Durham.

SEPTEMBER 28.—**Hemsworth.**—COTTAGE.—Erection of a caretaker's cottage at Kinsley Sewage Disposal Works, for the U.D.C. Mr. W. T. Lynan, A.M.I.C.E., Engineer and Surveyor, Hemsworth. Deposit £2 2s.

SEPTEMBER 28.—**South Eston.**—ALTERATIONS.—For alterations at the South Eston Council School, for the North Riding of Yorkshire T.C. Mr. J. C. Wrigley, Secretary, Education Committee, Northallerton.

SEPTEMBER 28.—**Tralee.**—HALL.—Erection of a new County Hall in the Green Park, Tralee, for the Kerry C.C. Mr. W. F. Quinlan, County Secretary, County Council Offices, Courthouse, Tralee. Deposit £2 2s.

SEPTEMBER 29.—**Bangor Teifi.**—CHURCH ROOM.—For the erection of a church room, with out offices, at Bangor Teifi. Mr. D. Emrys Rees, Bangor Teifi, Pentre Court.

SEPTEMBER 29.—**Holsworthy.**—LYCH GATE.—For building a new lych gate at Stanbury Cross, Holsworthy, for the U.D.C. Mr. Claude Kinsman, Clerk, Council Offices, Holsworthy.

SEPTEMBER 29.—**South Molton.**—HOUSES.—Erection of two blocks of five houses, for the T.C. Mr. P. G. Cocks, Borough Surveyor, South Molton, Devon. Deposit £2 2s.

SEPTEMBER 29.—**Tiverton.**—BATH.—Construction of an open-air bath in reinforced concrete, for the T.C. Mr. J. Siddalls, Borough Engineer, Town Hall, Tiverton. Deposit £2 2s.

OCTOBER 1.—**Haddington.**—HOUSES.—Erection of six houses, for the T.C.: Messrs. Reid & Macleod, architects, Haddington.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Brick layers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Brick- Masons' layers'	Plas- terers' Labourers.
Aberdeen	1/7	1/8	1/7	1/8	1/7	1/7	1/4½	1/-	
Airdrie	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Alexandria	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2	
Arbroath	1/7	1/8	1/6	1/7	1/6	1/6	1/5	1/1	
Ayr	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Bathgate	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/1 to 1/2	
Blairgowrie	1/7	—	1/7	1/7	1/7	1/7	1/6½	—	
Bo'ness	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2	
Coatbridge	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Dumbarton	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2	
Dumfries	1/5	1/5	1/5	1/6	1/5	1/6	1/5	1/1 to 1/2	
Dundee	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Dunfermline	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Edinburgh	1/7	1/7	1/7	1/8	1/8	1/7	1/6½	1/2½	
Falkirk	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Fort William	1/7	1/6	1/6	1/7	1/6	1/6	1/6½	1/1½	
Galashiels	1/5	1/5	1/5	1/6	1/5	1/5	1/5½	1/1	
Glasgow	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Greenock	1/7	1/7	1/7	1/8	1/7	1/7	1/5½	1/1 to 1/2½	
Hamilton	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Hawick	1/5	1/5	1/5	1/6	1/5	1/5	1/5½	1/1½	
Helensburgh	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Inverness	1/2½	—	1/3	1/4	1/4½	1/4	1/3½	10d. to 1/2	
Kilmarnock	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Kirkcaldy	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Kirkwall	1/7	1/5	1/3	1/4	1/4	1/4	1/4	1/-	
Lanark	1/7	1/7	1/7	1/8	1/7	1/7	1/5½	1/2½	
Leith	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Motherwell	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Perth	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Stirling	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Stirlingshire (Eastern District)	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Wishaw	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 465.

OCTOBER 1.—**Hertfordshire.**—COTTAGES.—Erection and completion of 32 detached cottages at various places in Hertfordshire, for the C.C. Mr. A. Ernest Prescott, M.Inst.C.E., Lieut.-Col., County Surveyor and Architect, Hatfield. Deposit £1 1s.

OCTOBER 1.—**Newbridge.**—ADDITIONS.—For additions to St. Thomas's College, Newbridge, Co. Kildare, for the Dominican Fathers. Messrs. Morris & Kavanagh, quantity surveyors, 68, Harcourt-street, Dublin. Deposit £3 3s.

OCTOBER 2.—**Cardiff.**—SUB-STATION.—Erection of sub-station, St. Michael's-road, Llandaff, for the T.C. Electrical Engineer, The Hayes, Cardiff. Deposit £1 1s.

OCTOBER 2.—**Greenwich.**—HOUSES.—Erection of 50 houses in two sections, for the B.C. Town Clerk, Town Hall, Greenwich. Deposit £2 2s.

OCTOBER 2.—**Thornhill.**—PAINTING.—For cleaning and decorating inside and outside Thornhill Wesleyan Chapel and Sunday School. Mr. J. R. Walshaw, Church-lane, Thornhill.

OCTOBER 3.—**Ramsgate.**—SEA WALL.—For the construction complete of a new reinforced concrete sea wall, on the indented bar principle, on the foreshore of the St. Lawrence Cliffs Estate, for the Borough. Mr. T. G. Taylor, Borough Engineer, Borough Engineer's Office, Albion House, Ramsgate.

✱OCTOBER 4.—**Blackpool.**—SCHOOL.—Erection of proposed Tyldesley Council School in Condor Grove, off Whitegate Drive, for the Blackpool Education Committee. Mr. Francis Wood, M.Inst.C.E., Borough Engineer and Surveyor, Municipal Buildings, Blackpool. Deposit £2.

OCTOBER 4.—**Tilbury (Essex).**—TELEPHONE EXCHANGE.—Erection of a new telephone exchange at Tilbury, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s., payable to the Secretary.

OCTOBER 5.—**Nottingham.**—POWER STATION.—Erection of buildings in connection with North Wilford Power Station, for the T.C. Mr. T. Wallis Gordon, City Engineer, Guildhall, Nottingham. Fee £2.

OCTOBER 7.—**Edinburgh.**—HOUSES.—Erection of two blocks of buildings (composing nine houses in all), two stories in height, at Bangholm, for the T.C. Mr. George Simpson, architect, 14, Hill-street, Edinburgh.

OCTOBER 7.—**Greenwich.**—REPAIRS.—Execution of repairs, on a schedule of prices, to property on the Roan Estates during the period ending March 31, 1924. Mr. P. B. Dannatt, Surveyor to the Foundation, 18, Nelson-street, Greenwich, S.E. 10.

✱OCTOBER 9.—**Basingstoke.**—POST OFFICE.—Erection of a new Post Office at Basingstoke for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s. (payable to the Secretary).

OCTOBER 9.—**London, W.**—VIADUCT.—Reconstruction of Perran Viaduct, near Perranwell Station, Falmouth Branch, for the Great Western Railway Co. Chief Engineer, Paddington Station, W.

OCTOBER 9.—**London, W.**—WALLS.—For the construction of retaining walls, bridges, and other works, at High-street Station, Swansea, for the Great Western Railway Co. Chief Engineer, Paddington Station, W.

OCTOBER 9.—**Yorkshire.**—REPAIRS.—Adaptation and repairs to four farmsteads on the Gargrave Estate, for the West Riding C.C. County Land Agent, County Hall, Wakefield. Deposit £1.

✱OCTOBER 10.—**Leeds.**—TELEPHONE EXCHANGE.—Erection of a telephone exchange, &c., at Headingley, Leeds, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s. (payable to the Secretary).

✱OCTOBER 10.—**London, E.9.**—ALTERATIONS.—Alterations for the provision of washing and changing rooms for outdoor female staff at the Eastern Fever Hospital, Homerton-grove, Homerton, E.9, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C.4. Deposit £1.

OCTOBER 15.—**Salford.**—GARAGE.—For building a motor garage adjoining the Central Fire Station, for the T.C. Borough Engineer, Town Hall, Salford. Deposit £2 2s.

OCTOBER 16.—**Margate.**—PAVILION.—Erection of a steel and timber bathing pavilion, for the T.C. Mr. E. A. Borg, Borough Engineer, 13, Grosvenor-place, Margate. Deposit £5.

OCTOBER 20.—**Near Abergavenny (Mon).**—HALL, &c.—For erecting a parish hall at Llanvihangel Cracorney (near Abergavenny), with submission of alternative estimate for same, if erected, of timber framing and galvanised corrugated sheeting. Mr. B. J. Francis, architect, Abergavenny. Names of intending tenders must be sent to Mr. W. H. Wood, Clerk to Parish Council, 1, Pant Glas, Pandy, near Abergavenny, by September 15th.

OCTOBER 29.—**Durham.**—SCHOOL.—Erection of Kirk Merrington New School, for the C.C. Mr. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

NOVEMBER 30.—**Singapore.**—POST OFFICE.—Erection of new general post office, Singapore. Crown Agents for the Colonies, 4, Millbank, S.W.1. Deposit £10.

NO DATE.—**Dumbarton.**—HOUSES.—Erection of six blocks of 24 houses at Renton, for the Dumbarton C.C. Mr. Joseph Weekes, architect, 88, College-street, Dumbarton. Deposit £1 1s.

✱NO DATE.—**Herts.**—FLATS.—Erection of forty flats with administrative block, for New Town Trust, Ltd., at the Welwyn Garden City. Mr. Harrison, Quantity Surveyor, Garrick Chambers, 11, Garrick-street, London, W.C. 2. Deposit £1 1s.

NO DATE.—**Horsforth.**—PICTURE HOUSE.—Erection of a new picture house at Horsforth, near Leeds. Mr. Arthur P. Harrison, M.S.A., High Close, Keighley.

NO DATE.—**Kingsbridge.**—HOUSE.—Erection of a dwelling-house at Bolberry, Hope Cove, near Kingsbridge. Mr. J. G. Howard, surveyor, Salcombe.

NO DATE.—**Portlemouth.**—HOUSE.—Erection of a dwelling-house at Portlemouth, Salcombe. Mr. J. G. Howard, surveyor, Salcombe.

NO DATE.—**Pudsey.**—PAINTING.—For colouring and painting interior of Parish Church. Mr. W. V. Scarth, Hon. Sec., P.C.C., Pudsey.

NO DATE.—**Rotherham.**—ALTERATIONS.—For structural alterations at the Tram Depot Buildings, Rawmarsh-road, Rotherham, for the T.C. Borough Engineer, Frederick-street, Rotherham.

NO DATE.—**Sherburn Hill.**—ALTERATIONS.—For alterations to flour store at the Sherburn Branch of the Sherburn Hill Co-operative Society. Messrs. J. Walton, Taylor & Son, rchitects, St. John-street, Newcastle-upon-Tyne.

NO DATE.—**Stroud.**—HOUSES.—Erection of four houses on Folly-lane Estate, for the U.D.C. Mr. A. Murray-Smith, Surveyor, Town Hall, Stroud, Glos. Deposit £2 2s.

FURNITURE, MATERIALS, etc.

SEPTEMBER 22. **Bucklow.**—MATERIALS.—Supply of granite setts, broken granite, tarred macadam, &c., to the R.D.C. Mr. R. C. Gordon, Highway Surveyor, Knutsford.

SEPTEMBER 22.—**Eccleshall Bierlow.**—SUPPLIES.—Supply of oils, paints, brooms, &c., for the B.G. Clerk, Union Offices, The Edge, Sheffield.

SEPTEMBER 24.—**Dover.**—SUPPLIES.—Supply (six months) of bricklayer and plumber materials, ironmongery, &c., for the B.G. Mr. C. Dacre Carder, Clerk, Market-square Dover.

SEPTEMBER 24.—**Gosport.**—MATERIALS.—Supply of road and other materials to the T.C. for six months. Mr. E. J. Goodacre, Borough Engineer, Town Hall, Gosport.

SEPTEMBER 24.—**Ilford.**—MATERIALS.—Supply of road and other materials to the U.D.C. Mr. H. Shaw, Surveyor, Town Hall, Ilford. Fee 1s.

SEPTEMBER 24.—**Ilkeston.**—MATERIALS.—Supply of granite slag, kerbs and concrete slabs, to the T.C. Borough Surveyor, Ilkeston.

SEPTEMBER 24.—**North Bierley.**—SUPPLIES.—Supply of paints, &c., for the B.G. Mr. W. G. Cooper, Clerk, Union Offices, 4, Town Hall-street, Bradford.

SEPTEMBER 24.—**Penarth.**—GRAVEL, &c.—For supply to U.D.C. of mountain limestone, gravel and basalt or granite gravel up to March 31, 1924. Mr. Edgar I. Evans, A.M.I.C.E., Council Offices, Penarth.

SEPTEMBER 24.—**Yarmouth.**—MATERIALS.—Supply of various materials to the T.C. Mr. S. P. Thompson, Borough Engineer, Town Hall, Great Yarmouth.

SEPTEMBER 25.—**Bedwellty.**—SUPPLIES.—For supplying the Bedwellty Guardians' institutions at Tredegar, Blackwood, and Ebbw Vale, with leather and grindery, ironmongery and cutlery, hardware and crockery, oils and brushes, drugs and surgical dressings, boots and shoes, coal, &c. Mr. William Hall, Clerk to the Guardians, Union Offices, Tredegar, Mon.

SEPTEMBER 25.—**Hertford.**—MATERIALS.—Supply of sewer ironwork, water fittings, &c., to the T.C. Borough Surveyor, Hertford.

SEPTEMBER 25.—**Manchester.**—MATERIALS.—Supply of (*a*) granite setts, (*b*) genuine English white lead, to the T.C. Mr. Henry Mattinson, General Manager, Corporation Tramways, 55, Piccadilly, Manchester.

SEPTEMBER 26.—**Cuckfield.**—MATERIALS.—Supply of road materials and for road rolling, for the R.D.C. Mr. H. L. Richardson, Surveyor, Offices, Haywards Heath.

SEPTEMBER 26.—**Exeter.**—MATERIALS.—Supply of materials for six months to the T.C. Mr. Thomas Moulding, City Engineer, Municipal Offices, Exeter.

SEPTEMBER 26.—**Gravesend.**—GRANITE SETTS.—Supply of 100 tons of 4 in. by 4 in. by 4 in. granite setts to the T.C. Mr. H. H. Brown, Town Clerk, Gravesend.

SEPTEMBER 26.—**Manchester.**—ELECTRIC LAMPS.—Supply of electric lamps for one year to the Board of Guardians. Mr. James Macdonald, Clerk, Union Offices, All Saints', Manchester.

SEPTEMBER 28.—**Stoke-on-Trent.**—MATERIALS.—Supply of cement, bricks, cast-iron work, &c. Borough Surveyor, Stoke-on-Trent.

SEPTEMBER 28.—**Swadlincote.**—GRANITE.—Supply of 1,500 tons of granite to the U.D.C. Mr. G. A. Taylor, surveyor, Council Offices, Swadlincote.

SEPTEMBER 28.—**York.**—MATERIALS.—Supply of various materials to the T.C. Mr. F. W. Spurr, City Engineer, Guildhall, York.

OCTOBER 1.—**Burnham-on-Sea.**—MATERIALS.—150 tons granite macadam, 1,000 tons limestone macadam, 200 tons limestone binding gravel, for the U.D.C. Mr. Wm. H. Chowins, Surveyor, Public Offices, Burnham-on-Sea.

OCTOBER 1.—**Ealing.**—MATERIALS.—Supply of limes, pipes, &c., cement, ironmongery, iron castings, paints, &c., to the B.C. Mr. W. R. Hicks, Borough Surveyor, Town Hall, Ealing.

OCTOBER 1.—**Gellygaer.**—MATERIALS.—Supply of materials to the U.D.C. Mr. F. Read, Surveyor, Council Offices, Hengoed.

OCTOBER 2.—**Margate.**—MATERIALS.—Cement, bricks, ironwork, sanitary pipes, &c. Mr. E. A. Borg, Borough Engineer, Margate.

OCTOBER 2.—**Margate.**—ROLLER.—For 8- to 10-ton road roller, for the T.C. Town Clerk, Margate.

OCTOBER 5.—**London.**—MATERIALS.—Supply to the Director-General, India Store Department, of (1) steam hammer, (2) paint. Store Dept., 14, Belvedere-road, S.E.

ENGINEERING, IRON AND STEEL.

SEPTEMBER 24.—**East Kilbride.**—BRIDGE WIDENING.—For the widening of the bridge and access road, and the construction of a new access road, at East Kilbride Railway Station, for the Lanark C.C. Mr. James Watson, Road Surveyor, Strathaven.

SEPTEMBER 24.—**Salford.**—COOLING AND PUMPING PLANT.—For cooling towers, pumping plant, and pipework, at Agecroft Power Station, for the T.C. Mr. J. A. Robertson, Consulting Engineer, 20, Brazenose-street, Manchester. Deposit £1 1s. per specification.

SEPTEMBER 25.—**Adwick-le-Street.**—STEEL ROOF.—Supplying and erecting of a steel-framed roof in two spans, about 100 ft. × 40 ft. each, in connection with the Council's storage reservoir, also the necessary steel stanchions, gutters, &c., for the U.D.C. Mr. George Gledhill, Surveyor, Council Offices, Adwick-le-Street, near Doncaster. Deposit £2.

SEPTEMBER 25.—**Dublin.**—PUMP.—For one pumping unit (oil engine and centrifugal pump), for the T.C. City Engineer, 28, Castle-street, Dublin, and Mr. J. S. Aflord, M.Inst.C.E., 11, Victoria-street, Westminster, London, S.W.1. Deposit £2 2s.

SEPTEMBER 26.—**London.**—GIRDER BRIDGES.—Supply to the Burma Railways Co. of girder bridges:—42 spans of 10 ft.; 10 spans of 20 ft.; 4 spans of 40 ft.; 3 spans of 100 ft. Mr. F. C. Franks, Secretary, 199, Gresham House, E.C. 2. Charge £1.

SEPTEMBER 26.—**Manchester.**—LAUNDRY MACHINERY.—Supply at the Mayfield Public Wash-house of wash-stalls, hydro extractors, drying horses, with heater, fan, &c., for the T.C. City Architect, Town Hall, Manchester. Deposit 10s. 6d.

SEPTEMBER 26.—**Ormskirk.**—ELECTRIC PLANT.—Supply and setting to work of one 40-k.w. steam-driven electricity generating set, for the B.G. Mr. G. J. Gibbs, M.I.Mech.E., 7, Lune-street, Preston. Deposit £2 2s.

SEPTEMBER 27.—**Bridgend.**—BRIDGE.—Erection of a steel footbridge over the River Ogmore, for the U.D.C. Council Offices, 11, Adare-street, Bridgend. Deposit £1 1s.

SEPTEMBER 27.—**Chelsfield.**—RESERVOIR.—Construction of covered service reservoir at Chelsfield, Kent, for the Metropolitan Water Board. Mr. H. E. Stilgoe, Chief Engineer, 173, Rosebery-avenue, E.C. Deposit £10.

SEPTEMBER 27.—**Chile.**—PORT IMPROVEMENT.—Improvement of the Harbour of Constitucion, for the Chilean Government. Chilean Legation, 22, Grosvenor square, W. 1.

SEPTEMBER 27.—**Salford.**—BRIDGES.—Construction of bridges over railway at Stott-lane widening (South end), for the T.C. Borough Engineer, Salford. Deposit £2 2s.

SEPTEMBER 29.—**Keel (Ireland).**—BRIDGE.—For reinstating the superstructure of the iron bridge at Keel (near Ballinrobe), for Mayo C.C. County Surveyor, Courthouse, Castlebar, Co. Mayo.

SEPTEMBER 29.—**Thetford.**—CAST-IRON PIPES.—Supply of 1,800 yds. of 7 in. and 4 in. cast-iron pipes, &c., for the T.C. Messrs. Sands & Walker, engineers, Milton Chambers, Nottingham. Deposit £3 3s.

OCTOBER 1.—**Bristol.**—HEATING, &c.—For the heating and ventilating of the Council School at Shirehampton, for the Bristol Education Committee. Mr. A. E. Oaten, F.A.S.I., architect, Phœnix Chambers, 22, Clare-street, Bristol. Deposit £1 1s.

OCTOBER 1.—**Egypt.**—STEAM LAUNCHES.—For three 40 ft. steam launches, for Ministry of Public Works, Egypt. Inspecting Engineer, Egyptian and Sudan Governments, Queen Anne's Chambers, Westminster, S.W.1.

OCTOBER 1.—**Llanmorlais (Glam).**—DRIVAGE.—For sinking a new slant at the Brynlais Collieries, Llanmorlais. Distance 200 yds., about; inclination 2 ft. per yd.; size of collar, 5½ ft.; height, 5½ ft. from rail; width, 9 ft. Drilling machines by compressed air and explosives supplied by company. The Secretary, Colliery Offices, Llanmorlais.

OCTOBER 2.—**London.**—AIR WASHING MACHINES.—Supply and installation of two air washing machines, with pumps, motors, &c., at the Imperial College of Science, South Kensington. Contracts Branch, H.M. Office of Works, King Charles-street, S.W.1. Deposit £1 1s.

OCTOBER 2.—**London.**—ELECTRIC LIGHTING.—For electric wiring of New Science Museum, South Kensington, for H.M. Commissioners of Works. Contracts Branch, H.M. Office of Works, King Charles-street, S.W. Deposit £1 1s.

OCTOBER 3.—**Rochdale.**—CONCRETE WORKS.—For cementing in concrete the bed of river Roch, &c., for T.C. Mr. S. H. Morgan, Borough Engineer, Town Hall, Rochdale. Deposit £5.

OCTOBER 5.—**Hanwell.**—ELECTRIC LIGHTING.—Extension of the electric lighting installation at the Central London District School, Greenford-avenue, Hanwell, W. 7. Mr. George P. Morrell, Clerk to School, Hanwell. Deposit 10s.

OCTOBER 8.—**Harrogate.**—DEPOT.—For roadworks, sewering, construction of siding, retaining walls, bridge, &c., in connection with the Central Depot, Dragon Junction, for the T.C. Mr. C. E. Rivers, Borough Engineer, Municipal Offices, Harrogate.

OCTOBER 9.—**Neath.**—BRIDGE.—Construction of a bridge over the River Neath and other works near Glyn Neath Station, for the Great Western Railway Co. Chief Engineer, Paddington Station, W.

OCTOBER 9.—**Toronto.**—ALTERNATING current generator, for T.C. Department of Overseas Trade, 35, Old Queen-street, S.W.1.

OCTOBER 10.—**Ely.**—WATER WORKS.—(1) Supplying and installing three-throw ram pumps, capacity 9,000 galls. each per hour, and semi-Diesel crude oil engines; (1a) Sinking two 20 in. boreholes, 60 ft. deep; (2) Laying about 35 miles of 7 in., 3 in., and 2 in. mains; (3) Construction of two reinforced concrete water towers, capacity 100,000 galls. each; (4) Supplying approximately 2,000 tons of cast-iron pipes and specials; (5) Supplying cast-iron valves and fittings, for the R.D.C. Mr. F. W. Green, Clerk, Council Offices, 11, Lynn-road, Ely, Cambs. Deposit of £5 for 2 and 3.

OCTOBER 15.—**Falmouth.**—ELECTRIC INSTALLATION.—For the installation of electric light at the Poor Law Institution of the B.G. Mr. E. P. Skinner, Clerk, Town Hall, Falmouth.

OCTOBER 15.—**Newcastle-on-Tyne.**—HEATING, &C.—For the remodelling of the heating and lighting installation at the City Hospital, Walker, for the T.C. Mr. Ernest Hatton, General Manager, Transport and Electricity Undertaking, Newcastle-on-Tyne.

OCTOBER 15.—**St. Pancras.**—BOILER.—For a Cornish boiler, for the B.C. Mr. C. H. F. Barrett, Town Clerk, Town Hall, Pancras-road, N.W. 1.

OCTOBER 15.—**Sunderland.**—ELECTRICAL INSTALLATION.—For installation of electric power and light at the Institution and Cottage Homes of the B.G. Mr. W. P. Brantingham, Clerk, Offices, 17, John-street, Sunderland. Deposit £1.

OCTOBER 24.—**Australia.**—BRIDGE.—Construction of bridge for Country Roads Board, Victoria. Agent-General for Victoria (Australia), Melbourne-place, Strand, W.C.2. Preliminary deposit £500.

OCTOBER 31.—**Australia.**—ELECTRIC CRANES.—Supply and erection at Port Adelaide of four 7-ton electric coal-handling cranes, for the South Australian Harbours Board. Agent-General for South Australia, Australia House, Strand, W.C.2.

NOVEMBER 1.—**Siam.**—BRIDGES.—Supply of superstructures of steel railway bridges to Siam State Railways. Messrs. C. P. Sandberg, 40, Grosvenor-gardens, S.W. 1. Charge 28s.

NOVEMBER 9.—**India.**—STEELWORK.—Supply of structural steelwork for wagon repair shop, Trichinopoly workshops scheme, for the South Indian Railway Co. Company's Offices, 91, Petty France, Westminster, S.W. 1. Charge £1.

NOVEMBER 30.—**Sydney.**—BRIDGE.—Construction of the superstructure and substructure of a cantilever bridge across Sydney Harbour; also an alternative tender for the construction of the superstructure and substructure of an arch bridge across Sydney Harbour. Agent-General for New South Wales, Australia House, Strand, W.C.

DECEMBER 3.—**Sydney.**—High tension switchgear, for Municipal Council. Department of Overseas Trade (Room 52), 35, Old Queen-street, S.W.1.

NO DATE.—**King's Lynn.**—HEATING.—For the heating of Watlington Church, King's Lynn. Mr. Edwin J. Tench, F.R.I.B.A., 15, Thorpe-road, Norwich.

ROAD, SANITARY, AND WATER WORKS.

SEPTEMBER 24.—**Beaufort.**—CRICKET GROUND.—Construction of a new cricket ground at Beaufort, Mon, for the Trustees, Beaufort Recreation Grounds. Mr. Lewis Jones, Architect, Ebbw Vale. Deposit £1 1s.

SEPTEMBER 24.—**Blaenavon (Mon).**—FERRO-CONCRETE WORKS.—For construction for the Blaenavon U.D.C. of a ferro-concrete lining to the existing No. 4 Reservoir, comprising about 6,000 square yards of reinforced concrete. Messrs. Thomas & Morgan & Partners, architects, Gelliwasted-road, Pontypridd. Deposit £5 5s.

SEPTEMBER 24.—**Bothwell.**—ROADS.—For the widening and improvement of the Carnbroe highway in the parish of Bothwell, for the Lanark C.C. Road Surveyor's Office, District Offices, Hamilton.

SEPTEMBER 24.—**Glyncorrwg.**—CEMETERY.—Extension of the Cymmer Cemetery, for the U.D.C. Mr. W. P. Jones, Surveyor, Council Offices, Cymmer, Port Talbot. Deposit £1 1s.

SEPTEMBER 24.—**Kensington.**—MANHOLES.—Construction of a number of manholes, together with incidental means of ventilation on certain dead ends of sewers in the Borough, for the B.C. Borough Engineer, Town Hall, Kensington, W.8. Deposit £1 1s.

SEPTEMBER 24.—**Manchester.**—ROADS.—Draining, paving (with concrete), flagging (natural flags), curbing, &c., Atherley-grove and Northfield-avenue, Moston; Oak-avenue and Chestnut-avenue, Chorlton-cum-Hardy; Poplar-avenue, Whalley Range, and various back passages, for the T.C. Paving, &c., Department (District Surveyors' Office), Town Hall, Manchester. Deposit £1 1s.

SEPTEMBER 24.—**Northampton.**—TRAMWAYS RELAYING.—For taking up and re-laying of a portion of the permanent way in Kettering-road and Gold-street, comprising 1,624 yds. of single track, for the T.C. Mr. Alfred Fidler, Borough Engineer, Guildhall, Northampton. Deposit £2 2s.

SEPTEMBER 24.—**Richmond (Yorks).**—ROADS, &C.—Construction of roads and sewers on Terrace House Estate, for the Richmond Garden Suburb, Ltd. Mr. J. R. Wetherell, Architect, Queen's-road, Richmond, Yorks. Deposit £2 2s.

SEPTEMBER 24.—**Skipton.**—SEWAGE WORKS.—Construction of sedimentation tank, percolating filter, humus tank, &c., for the R.D.C. Mr. A. Rodwell, Surveyor, Council Offices, 16, Gargrave-road, Skipton. Deposit £2 2s.

SEPTEMBER 24.—**Stoke-on-Trent.**—SANITARY.—For conversion into water-closets of 40 privy cesspools and 400 pail closets at Hanley, for the T.C. Chief Sanitary Inspector, St. Peter's Chambers, Stoke.

SEPTEMBER 25.—**Caerphilly.**—ROADS.—Making up road approaches from St. Cenydd-terrace to First-avenue, Second-avenue, and The Crescent, Caerphilly, and road approach from Llwyncelyn-terrace to Brypcelyn, Nelson. Mr. T. H. Richards, Surveyor, Council Offices, Caerphilly. Deposit £1 1s.

SEPTEMBER 25.—**Enfield.**—ROAD WIDENING.—Widening at the junction of High-street and South street, Ponders End, for the U.D.C. Mr. H. R. Crabb, M.Inst.C.E., Engineer and Surveyor, Public Offices, Enfield, Middlesex. Deposit £2 2s.

SEPTEMBER 25.—**Failsworth.**—ROADS.—Asphalting of footpaths at the Lower Failsworth Memorial Park, for the U.D.C. Mr. J. W. E. Brown, Town Hall, Failsworth, near Manchester.

SEPTEMBER 25.—**Glasgow.**—DAM.—For the raising and extending the masonry dam at the outlet of Loch Katrine, and the raising and strengthening the inlet basins to the tunnels at the upper end of the aqueducts, for the Glasgow T.C. Mr. J. R. Sutherland, Engineer, Water Department, 45, John-street, Glasgow. Deposit £2 2s.

SEPTEMBER 25.—**Glasgow.**—ROADS.—Construction of roads and sewers at Knightswood, for the T.C. Directors of Housing, Town Hall, Govan.

SEPTEMBER 25.—**Isleworth.**—PAVING.—For relaying new concrete or alternatively wood-block paving to the stores yard at Warkworth House, for Brentford Union. Mr. F. E. Harmsworth, Clerk to the Guardians, Loolands House, 34, Twickenham-road, Isleworth, Middlesex.

SEPTEMBER 26.—**East Molesey.**—SEWER.—Construction of 682 ft. run of 9 in. main sewer, for the U.D.C. Surveyor, Council Offices, East Molesey.

SEPTEMBER 26.—**Glasgow.**—SLUICE.—Construction of a sluice and pipe drains at Hogganfield Loch, for the T.C. Office of Public Works, City Chambers, 64, Cochrane-street, Glasgow.

SEPTEMBER 26.—**London, S.W.**—STONE PAVING.—For stone paving a portion of the East Terrace, Windsor Castle, for H.M. Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, S.W.1. Deposit £1 1s.

SEPTEMBER 26.—**Rochford.**—ROADS.—For road strengthening works, &c., on Tarpots-road, South Benfleet, for the R.D.C. Mr. A. C. Madge, "Eastdene," Rochford. Deposit £1 1s.

SEPTEMBER 26.—**Windsor.**—STONE PAVING.—For stone paving a portion of the East-terrace, Windsor Castle, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W. 1. Deposit £1 1s., payable to the Secretary.

SEPTEMBER 27.—**Arnold.**—ROAD.—For making-up of Egerton-road and for widening the carriageway in Woodthorpe Drive, Woodthorpe, for the U.D.C. Surveyor, Arnot Hill House, Arnold.

SEPTEMBER 27.—**Oadby.**—SEWAGE.—For providing and laying sewerage works, for the U.D.C. Mr. G. Edgar Fryer, Council Offices, Oadby, Deposit £5 5s.

SEPTEMBER 27.—**Salford.**—ROAD WIDENING.—For Stott-lane widening (South end), including new plate girder bridge, widening of brick arch bridge, retaining walls and street works, for the T.C. Borough Engineer, Deposit £2 2s.

SEPTEMBER 28.—**Hemsworth.**—SEWAGE DISPOSAL.—For extensions to sewage disposal works, for the U.D.C. Mr. W. T. Lynam, Surveyor, Hemsworth. Deposit £2 2s.

SEPTEMBER 28.—**Lymington.**—SEWERAGE.—For sewage disposal works at Milton, for the R.D.C. Mr. H. C. H. Shenton, 28, Victoria-street, S.W. Deposit £3 3s.

SEPTEMBER 29.—**Sankey.**—BRIDGE.—Reconstruction of Barnes Bridge, Sankey, for the Lancashire C.C. Offices of the County Surveyor and Bridge Master, County Offices, Preston.

OCTOBER 1.—**Beckenham.**—ROAD WIDENING.—For the widening of a portion of Bromley-road, for the U.D.C. Mr. John A. Angell, Surveyor, Council Offices, Beckenham. Deposit £2.

OCTOBER 1.—**Friern Barnet.**—ROADS.—For resurfacing Oakleigh-road, for the U.D.C. Mr. E. P. Kindell, Surveyor, Council Offices, New Southgate, N.

OCTOBER 2.—**Portslade-by-Sea.**—PAVING, &C.—For supply of road materials and for paving works, for the U.D.C. Mr. A. Taylor Allen, Surveyor, Council Offices, Portslade-by-Sea, Sussex.

OCTOBER 3.—**Cardiff.**—ROADS.—(a) Widening Rectory-road, Leckwith; (b) Widening Caermain-road, Llancarfan, for the R.D.C. Mr. W. Farrow, Surveyor, Park House, 20, Park-place, Cardiff.

OCTOBER 3.—**Wembley.**—ROADS.—For surfacing of carriageway of Ealing-road with natural rock asphalte, for the U.D.C. Mr. C. R. W. Chapman, surveyor, Wembley. Deposit £1 1s.

OCTOBER 4.—**Hove.**—ROADS.—Making-up Avondale-road, for the T.C. Mr. H. H. Scott, Borough Surveyor, Town Hall, Hove.

OCTOBER 4.—**Wandsworth.**—ROADS.—For paving Faygate-road, Fontaine-road, Ockley-road, Strathbrook-road, Woodbourne-avenue, Cricklade-avenue (part), and Downton-avenue (part), Streatham; Ellerton-road (part), Headington-road, Liddard-road, and Leckford-road, Wandsworth; and Victoria-road, Southfield, for the B.C. Mr. E. J. Elford, Borough Engineer, 215, Balham High-road, S.W. 17. Deposit £1 1s.

OCTOBER 10.—**Ely.**—WATERWORKS.—Supplying and installing three-throw ram pumps, semi-Diesel crude oil engines, sinking boreholes, laying and jointing about 35 miles of mains, construction of two reinforced concrete water towers, supplying 2,000 tons of cast-iron pipes and specials, and supplying cast-iron valves and fittings, for the U.D.C. Clerk, R.D.C. Offices, 11, Lynn-road, Ely, Cambs. Deposit £5.

✱NO DATE.—**London, S.W.1.**—SLABS AND ROAD BLOCKS.—Making paving tiles, slabs and road blocks with "Sawdacrete" mixture, for Novocretes, Ltd., British Columbia House, 1–3, Regent-street, S.W.1.

NO DATE.—**Torquay.**—PAVING.—Providing and laying approximately 12,000 sq. yds. of creosoted red or yellow deal block paving on concrete foundation in various streets in Torquay. Mr. Henry A. Garrett, Borough Engineer, Town Hall, Torquay. Deposit £2 2s.

Competitions.

(*See Competition News, page* 436.)

Auction Sales. Tenders, etc.

✱SEPTEMBER 24.—**King's Lynn.**—Messrs. Miles & Easter will sell at Wood Working Factory, Tower-street, King's Lynn, machinery, plant, and stock-in-trade of the S.P. Manufacturing Co., Ltd., for the Receiver for the Debenture Holder. Auctioneers, Broad-street Chambers, King's Lynn.

SEPTEMBER 25.—**London, E.C.**—Messrs. Rutley, Vine & Gurney will sell, *re* J. R. Chalmers, deceased, at 155, Queen Victoria-street, building land plots at Oakleigh Park (frontages 117 ft.), Friern Barnet (60 ft.), Herne Bay (120 ft.), Harrietsham (70 ft.), Hoo, Kent (80 ft.), Denton, Newhaven (50 ft.), Lee-on-Solent (60 ft.). Auctioneers, 6, George-street, Euston-road, N.W.1.

SEPTEMBER 26.—**Ripon.**—MATERIALS.—For the purchase of materials at Ripon Camp. Roads and Communications Officer, Ripon Camp.

SEPTEMBER 29.—**Carnarvon.**—Messrs. Wm. Dew & Son and R. Arthur Jones will sell in voluntary liquidation by order of the liquidators, at the Royal Hotel, Carnarvon, valuable slate and granite quarries at Waunfawr, near Carnarvon, all those valuable slate and granite quarries and three farms, together with grazing rights on Douen Las sheep walk. Auctioneers, Bangor, Conway, and Colwyn Bay.

OCTOBER 2.—**Dalston, London, N.**—Messrs. Joseph Hibbard & Sons will sell by order of the High Court of Justice, Chancery Division (Mr. Justice Russell), *re* W. Warden, Ltd., Temple *v.* Warden, at the Dalston Saw Mills, No. 26, Regent's-row, Queen's-road, Dalston, saw mill machinery and plant. Auctioneers, 15, Newington-green, Islington, N.16.

OCTOBER 2.—**Dalston, London, N.**—Messrs. Joseph Hibbard & Sons will sell, previously to the sale of plant, by order of the High Court of Justice, Chancery Division (Mr. Justice Russell), *re* W. Warden, Ltd., Temple *v.* Warden, at the most moderate reserve upon the premises, No. 26, Regent's-row, Dalston, brick-built conveniently arranged leasehold sawmill, timber yard and residence, known as Dalston Saw Mills, No. 26, Regent's-row, and 60, Pownall-road (situated by the side of the Regent's Canal), together with nine-roomed residence; vacant possession (except of the house) will be given upon completion. Auctioneers, 15, Newington-green, Islington, London, N.16.

✱OCTOBER 4 & 5.—**London, E.C. 3.**—Messrs. C. C. & T. Moore will sell by order of executors of the late J. J. Hickmott (the elder), deceased, forty acres of land with frontage at Longford, Kent; 16¼ acres of land with frortages to London-road and Swanley-road. Auctioneers, 7, Leadenhall-street, E.C. 3.

OCTOBER 9.—**Middlesex.**—Messrs. Allsop & Co. will sell by direction of the George Cohen & Armstrong Disposal Corporation at R.A.F. Depot, West Drayton, Middlesex (G.W.R.), timber, glass and other building materials. Auctioneers, 141, Park-road, N.W. 8, and 15, Soho-square, W. 1.

✱OCTOBER 23.—**London, S.W.**—Messrs. Bradshaw, Brown & Co. have received instructions from Messrs. W. G. Tarrant, Ltd., to sell, owing to the completion of contracts, Wandle Valley Relief Sewer, L.C.C., contractors' plant and material, laying at the following depots, viz., 536, Garrett-lane, Tooting, S.W., close to Earlsfield Station, and Church-lane, Tooting, S.W. (near by). Auctioneers, Billiter-square Buildings, London, E.C. 3.

OCTOBER 25.—**Essex.**—Messrs. Knight, Frank & Rutley will offer for sale as a going concern the valuable freehold Portland cement, lime and whiting Works, Saffron Walden, Essex. Auctioneers, 20, Hanover-square, W.1.

OCTOBER 30.—**London, W.1.**—Messrs. Henry Holmes & Co. will sell at Mortimer Hall, 93, Mortimer-street, Oxford Circus, W. 1, important building site, 14, 16 and 18, Great Titchfield-street, and 9A, Margaret-street, Oxford Circus, W. Auctioneers, 82, Mortimer-street, W. 1.

Public Appointments.

SEPTEMBER 27.—**Ealing, London, W. 5.**—Assistant Building Inspector required to act under the directions of the Borough Surveyor and the Chief Building Inspector in the supervision of building operations in accordance with the Council's By-laws by the T.C. Mr. W. R. Hicks, A.M.Inst.C.E., F.S.I., Borough Engineer and Surveyor, Town Hall, Ealing, W. 5, endorsed "Assistant Building Inspector."

✱SEPTEMBER 28.—**Chester.**—Town-planning Assistant required in the City Engineer's Department (the appointment is a temporary one) by the City Council. Mr. J. H. Dickson, Town Clerk, Town Hall, Chester, endorsed "Town-Planning Assistant."

✱SEPTEMBER 29.—**Carmarthen.**—Competent Assistant (London trained preferred) for a period of six to twelve months, for school designs and details, by the Carmarthenshire C.C. Mr. W. Vincent Morgan, A.R.I.B.A., County Architect, Carmarthen.

✱SEPTEMBER 29.—**Newcastle-upon-Tyne.**—Senior Architectural assistant required in the office of the Housing Architect by the City and County Council of Newcastle-upon-Tyne. Mr. A. M. Oliver, Town Clerk, Newcastle-upon-Tyne.

✱OCTOBER 6.—**London, S.W. 1.**—Assistant Civil Engineers required in Civil Engineer-in-Chief's Department, Admiralty, at H.M. Naval Establishments at Home and Abroad; also Temporary Engineering Assistants required in London Office of Civil Engineer-in-Chief's Department, Admiralty, and at Outports. Civil Engineer-in-Chief's Department, Admiralty, London, S.W. 1, on recognised form.

✱NO DATE.—**London, N. 7.**—Lecturer on Estimating required for Wednesday evenings by the Governors of The Northern Polytechnic Institute, Holloway, London, N. 7.

PROPOSED NEW BUILDINGS & OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERDEEN.—The T.C.'s Water Committee has agreed to proceed with the construction of a further section of the aqueduct from Crathes to Culter, at an estimated cost of £170,000. It was also agreed to construct a new intake at Cairnton at an estimated cost of £19,000.

ABERYSTWYTH.—The R.D.C. has received notification that the Ministry of Transport will make a grant of £1,500 toward the cost of reconstructing Rhiwarthen Bridge (estimate £3,000) and £250 toward similar work on Glanaber Bridge (estimate £500). The R.D.C. has submitted road schemes for grant totalling £8,188.——Plans passed by B.C.: Three houses in Prospect-place, for Mr. John Evans; three houses in Sea View-place, for Mr. W. Thomas; alterations to old Vicarage, Llanborden-road.

ALNWICK.—The U.D.C. has agreed to apply for permission to borrow £3,000 for the construction of filter beds for the Alnwick water supply.

ANSDELL.—Plans have been prepared for a new Baptist Church School; Mr. T. Harrison, of Accrington, is the architect, and tenders are being invited.

AYLESBURY.—Plans passed by T.C.: Workshop, Havelock-street, Mr. P. R. E. Eaton, for Mr. C. E. Page; two houses, Fleet-street, for Mr. H. Witney; extension of storage, Education Sub-Office, Church-row, Mr. C. H. Riley, for the Bucks C.C.; eight houses, Tring-road, Mr. C. H. Wright, for Messrs. Hazell, Watson & Viney, Ltd.; boiler house, Aylesbury Steam Laundry, Mr. P. R. E. Eaton, for Mr. J. Robinson; house, Wendover-road, Mr. C. H. Wright, for Mrs. E. Wood; alterations and additions, laundry, Union House, Mr. F. Taylor, for Aylesbury Union; alterations, 23, Castle-street, Mr. C. H. Wright, for Mr. R. East; two houses, Havelock-street, Mr. Fleet, for Mr. A. W. Hadaway.

AYRSHIRE.—The Northern District Committee of Ayrshire C.C. has passed plans for the following new buildings in North Ayrshire: Cottage, Steenston-road, Kilwinning, for Mr. John Owens; bungalow, Stoneyholm-road, Kilbirnie, for Mr. John Grant; bungalow, Caldwell-road, West Kilbride, for Misses Fyfe; bungalow, Cochrane-street, Kilbirnie, for Mr. and Mrs. John Alexander; cottage, Redheugh, Kilbirnie, for Mr. Bryce M. Knox; cottage, Bowfield-road, West Kilbride, for Mrs. Mary Crawford Harper; house, Caldwell-road, West Kilbride, for Mr. W. A. Sloan; two slated houses, Southannan, Fairlie, for Mr. W. N. M'Neil; cottages, South Cottage, Portencross, West Kilbride, for Mr. A. B. Allan; house, Fairlie-road, Largs, for Miss Helen M. W. Wotherspoon; conversion of three huts into six houses of four apartments each at Hut Colony, Kilbirnie.—Plans were also passed for several additions and alterations to dwelling-houses.

BARNET.—The U.D.C. has decided, subject to the consent of the Ministry of Health on the raising of a loan, to provide an open-air swimming bath for the town. A site on the Old Court House Estate has been suggested.

BARNSLEY.—Plans passed by T.C.: Wilson & Longbottom, latrines, &c., to works, Nelson-street; W. Storrs, Barnsley Traction Co., extension to garage, Sheffield-road; T. Gaimster motor garage and store, York-street; Dr. Chapple, garage, Hunningley-lane, Stairfoot; T. Pearson, two houses, Westbourne-grove; Edmund Hoyland, bungalow, Dodworth-road; Mrs. B. M. Wright, bungalow, Ardsley-road, Stairfoot; G. W. Ambler, bungalow, Pontefract-road, near Cudworth Station; John Shillito, bungalow, Lund-lane; T. Gosling, bungalow, Fish Dam-lane, Monk Bretton; John Lawrence, bungalow, Gilroyd.——Tenders are invited for the erection of 44 houses on the Carlton-lane site. The Ministry of Health has sanctioned the borrowing of £12,590 for the erection of 36 houses on the Wilthorpe Estate.

BARTON.—It is stated that Messrs. Brooke, Bond & Co. will erect a large tea warehouse.

BATLEY.—The T.C. has passed a recommendation that certain property belonging to the Corporation, Nos. 33 to 45, Commercial-street (Batley's principal shopping thoroughfare), be demolished and the sites cleared.

BEDWELLTY.—The Consulting Electrical Engineer to the U.D.C. has submitted estimates of £4,090 for proposed supply of electricity to Cefn Forest.

BELFAST.—The Unemployed Relief Grants Advisory Committee has approved conditionally of the erection of 8 parlour houses, Ravenhill Park-gardens, 8 parlour houses at Ormiston-crescent site, and 26 parlour houses at Old Park-road site, by the T.C.——The Northern Ireland Government has acquired the old Butter Market in Corporation-street as a site for a new central Labour Exchange.

BELMONT (SURREY).—Part of the Belmont Workhouse is to be converted into a convalescent home for former inmates of London workhouse infirmaries.

BERWICK.—Plans passed by R.D.C.: House at Scremerston, for Mr. J. A. Kilpatrick.

BLACKBURN.—Plans passed by T.C.: House, Meins-road, by Mr. F. L. Shorrock; addition to house, East Park-road, by Messrs. T. P. Willson & Sons, Ltd.; two houses, Gorse-road, by Messrs. McLeod & Butterworth; house, Green-lane, by Mr. J. Walmsley; house, Hardman-street, by Mr. Joshua Grimshaw; two houses, Featherbed-road, by Mr. H. Ibbotson; alterations, 25, Lord-street, by Mr. P. Nicoll; church, Shear Brow, by the Committee of Four-lanes End Congregational Church; cinema hall, Mincing-lane, by Mr. A. Bradley.

BLACKPOOL.—Plans passed by T.C.: J. D. Armstrong, four houses, Highgate, Squire's Gate; Harrison & Pilkington, two houses, Silverwood-avenue; Mr. and Mrs. Tolmaer, two houses, Leamington-road; Horne & Collins, two houses, Bispham-road; Mrs. S. J. Marsden, bungalow, Abbey-road; H. G. Ridehalgh, two houses, Harley-road; A. Fletcher & Co., bungalow, Roseacre-avenue; F. Bunghill, two houses, Cavendish-road; J. Gregson, one house and five shops, Bloomfield- and Prospect-roads; W. Yates, nine houses, Cornwall-avenue; — Hague, nine houses, Poulton-road; J. Parkinson & Sons, 14 houses and 22 garages, Leamington and Leicester-roads; J. Taylor, five houses, Queen Victoria-road; G. H. Graham, two houses, Waterloo-road; J. Greenwood, five houses and shops, Whitegate-drive; J. Harrison, three houses, Waterloo-road; J. Parkinson & Sons, six houses and shops, Whitegate-drive; A. Englesent, three houses, St. Annes-road; W. Rimmer, two houses, Bispham-road; H. Thompson, three houses, Leamington road; J. Clewes, two houses, Grasmere-road: H. D. Whiteside, two houses, Windermere-road; W. Rimmer, two houses, Hemingway; F Matthews, two houses, Bispham-road; W. A. L. Hayes, house, Queen's-drive; Thos. Halliday, house, Lytham-road; E. E. Vickers, two houses, Gloucester-avenue; Kay & Fisher, bungalow, Buwgate, off Squire's Gate-lane; G. H. Walker, two houses, Horncliffe-road; J. England & Son, two bungalows, Bank-avenue, Bispham; Mrs. H. Hodgson, house, Preston Old-road; Miss M. Legge, house, Watson's-lane; A. M. Goldsmith, house, Arnold-avenue; J. E. Walmsley & Co., two houses, Gladfield-road; J. Gregg, two houses, Westmorland-avenue; A. Bernstein, two bungalows, Cumberland-avenue; Lord & Mellodew, two houses, Queen's-drive and St. Stephen's-avenue; W. Legge, house, Arnold-avenue.

BOSTON.—Plans passed by T.C.: House, by Mr. C. T. Pickering, in Fydell-crescent; shed, proposed by Mr. G. W. Periam, in Robin Hood's-walk; conversion of workshop into a house, by Mr. W. Schrimshaw, in Mainridge.

BRADFORD.—The City Architect has submitted plans for the extension of the Westwood and Ashfield Institutions at a cost of £3,541.

BRECON.—The County War Memorial Committee is about to proceed with converting the Brecon and County Infirmary into up-to-date County Hospital.

BROMLEY.—Plans passed by T.C.: House, Minster-road, Mr. F. Faircloth; bungalow, Mayfield-road, Mr. H. C. Bridle; house, Widmore-road, Mr. E. Pawley; bungalow, Mayfield-road, Messrs. J. Ellman & Son; house, Park-avenue, Mr. F. A. Wastell; house, Avondale-road, Messrs. R. Large & Son; house, King's-avenue, Mr. A. W. Williams; house, Garden-road, Messrs. Hayward & Maynard; bungalow, Burford-road, Mr. A. Webb; house, Park-avenue, Mr. A. Frampton; two houses, Alexandra-crescent, Mr. A. Frampton; two houses, London-lane, Messrs. J. Quilter & Son; bungalow, Minster-road, Messrs. T. Crossley & Son; two houses, Sandford-road, Messrs. Soole & Son; house, King's-avenue, Messrs. Gledhill Bros.; house, Langdon-road, Mr. C. Tyler; bungalow, King's-avenue, Mr. M. J. Palin; bungalow, Blenheim-road, Messrs. Collis & Clark; house, Plaistow-lane, Mr. J. Seaton Dahl; two houses, Avondale-road, Mr. A. Frampton; bungalow, Sunningdale-road, Mr. J. B. Hopgood; house, Cromwell-avenue, Mr. P. Coad; bungalow, Mayfield-road, Mr. D. Lake; and garage, Bromley Common, London General Omnibus Company.

BURTON-ON-TRENT.—A proposal to extend the Burton Municipal Museum at an estimated cost of from £5,000 to £6,000 is to be considered at the next meeting of the T.C.

CALVERLEY.—Plans passed: New cable through Farsley, for the Yorkshire Electric Power Co., Ltd.; new coal shed, for W. T. Hartley & Son.

CARLISLE.—Plans passed by T.C.: Weaving rooms at Messrs. Morton's Sundour Fabrics, Ltd.'s. three-story warehouse at the Holme Head works of Messrs. Ferguson Bros.

CHELTENHAM.—Plans passed by T.C.: J. W. D. Booth, house, Tanner's-lane, Arle; Cheltenham Original Brewery Co., Ltd., additions to "The Berkeley Arms," Albion-street; Chatters, Smithson & Rainger (architects for applicant), site plans for lock-up shops at No. 1, Lypiatt-terrace, fronting on Lansdown Place-road; Miss Gardner, house, London-road; P. Witts, two houses, Old Bath-road: Smith's Systems, Ltd., factory front, offices and show rooms, Tennyson-road.

CHEPSTOW.—The Ministry of Health has sanctioned the Caldicot sewerage scheme estimated to cost £3,000.

CHIPPENHAM.—Plans passed by R.D.C.: Kington St. Michael, two cottages, Sir Audley Neeld; Box, bungalow, Hazelbury Hill, Mr. R. Watson; Christian Malford, cottage, Mr. S. Hawkins; Yatton Keynell, stables, Park Farm, Sir Audley Neeld; Box, shop, High-street, Mr. Parke.

CLAYPOLE.—The R.D.C. has decided to proceed with a water scheme, at an estimated cost of £3,670.

CONSETT.—The U.D.C. is to negotiate with the Consett Iron Co. for the purchase of land behind the local Wesleyan Chapel as a site for a public market.

CUCKFIELD.—Plans for improvements to the Church Schools, at a cost of £450 to £500, have been prepared by Mr. Stanley Towse, F.R.I.B.A.

DARLINGTON.—The Housing Committee is recommending the T.C. to apply to the Ministry of Health for approval of the erection of 604 houses, and the payment of a lump sum grant of £75 per house erected before September 30, 1925.

DEPWADE.—The B.G. has decided on a scheme for central heating and lighting the Workhouse, at a cost of from £3,635 to £3,945.

DISS.—Plan passed: Premises for Shell-Mex Co.

DOVER.—The Harbour Board has approached the Trades Facilities Committee for a guarantee of a loan of £1,250,000 for the construction of a new wet dock of 25 acres, and berthing and quay facilities for large vessels. The Board's scheme, for which they hold Parliamentary powers, has been formulated to meet the developing coal and iron industries in East Kent. Sir Joseph Broadbank, the Commissioner appointed, has completed his local enquiry.

EASINGTON.—The R.D.C. Building Committee has passed plans for 125 houses for the Weardale Coal Co. at Thornley.

EASTBOURNE.—The R.D.C. has decided to spend £4,000 on improving the highway between the Borough boundary and the River Cuckmere, providing the Ministry of Transport contributes to the cost.

EASTLEIGH.—The Hampshire Farmers' Co-operative Abattoirs and Bacon Factory, Ltd., have decided to erect a bacon factory in the town.

EDINBURGH.—The Tramway Committee has decided to recommend reconstruction of the Portobello Tramway Depot at a cost of £4,000, and the erection of new offices in Leith at a cost of £3,000.

ELGIN.—At the quarterly meeting of the managers of Dr. Gray's Hospital, Elgin, it was decided to have new X-ray apparatus installed and also to carry out structural improvements.

FARSLEY.—Plans passed: Garage at Leeds-road, for the A.B.C. Publishing Co., Ltd.; extension to garages, for the Armitage Motor Co., petrol store, for E. Woodhouse & Co., Ltd.

FAVERSHAM.—Plan passed for additions to head master's house at Osprinye School.

GALASHIELS.—At a meeting of T.C. plans were passed and warrant granted to the Royal Bank of Scotland, Ltd., to demolish the existing bank buildings at the corner of High-street and Bridge-place, and to erect in their place a range of buildings three stories high, consisting of bank offices, offices and dwelling-house. The architects are Messrs. J. & J. Hall, of Galashiels.

GLAMORGANSHIRE.—The County Standing Joint Committee has decided upon the following works: To call on Messrs. Brunner, Mond & Co. to provide at own cost a new Police Station at Clydach to replace one rendered uninhabitable; to expend £3,000 upon improving the Cowbridge Police Station and Court; to spend £3,000 on rebuilding the Tonypandy Police Station.—The Committee has called for report with a view to rebuilding Ferndale Police Station.

GLASGOW.—Work on the projected Shieldhall and Renfrew Dock scheme of the Clyde Trust has been commenced: when completed, seven miles will be added to the quays at Glasgow at a cost of £95,000.

GOODWICK.—The U.D.C. has passed plans for a new bungalow for Miss Angela Matthias at Plasygammil.——Mr. J. H. Brinn, Goodwick, has notified the U.D.C. on behalf of local railwaymen that they intend to build houses under G.W.R. Co's. assistance scheme, and Council has decided to assist.

GOOLE.—Arrangements are almost completed for the new Boothferry Bridge over the River Ouse. The estimated cost is about £100,000.

GUISELEY.—It is hoped to commence building a new Wesleyan Sunday School before next spring.

HAZEL GROVE.—Plans passed by U.D.C.: Bungalow, Highfield-road, Bramhall, for Messrs. F. Hallows & Co.; house, Highfield-road, Bramhall, for Mr. B. Croft; house, Bramhall Moor-lane, Hazel-grove, for Mr. J. Driscoll; houses, off Ladythorn-crescent, for Mr. Ogden and Mr. A. Whittaker; house, Cooke-street, for Mr. T. Thatcher.

HOLME CULTRAM.—Plans passed by U.D.C.: Mr. Oldfield, house at Skinburness; Mr. Bradley, house at Skinburness.

HORSHAM.—The West Sussex Education Committee has considered detailed costs in connection with the proposed purchase of Tanbridge House, Horsham, for conversion into a secondary school. These include, in addition to purchase price £7,000, alterations £3,250; furniture £600, and other items, bringing the total to £11,225. Plans have been prepared by the County Architect, Mr. H. P. Roberts.

HOVE.—Plans passed by T.C.: Mr. W. H. Overton, for Mr. W. J. Keene, house and garages, Langdale-road; Mr. W. H. Overton, for Mr. H. Fairburne, conversion into flats, 29, Brunswick-square; Mr. T. B. Hunter, for Mr. J. Rowe, office and room, Seafield-mews; Mr. T. H. Buckwell, for Mrs. Gahagan, conversion into flats, 91, Lansdowne-place; Messrs. Oetzmann & Co., Ltd., for Mrs. M. C. Soul, house, New Church-road (north side); Messrs. Clayton & Black, for Mr. J. Marcus, alterations, 3, Brunswick-terrace; Mr. W. H. Overton, for Mr. Marchant, houses, 13 and 15, Ferndale-road; Mr. E. Harrison, for Messrs. Harrison & Whettingstall, motor garage, 6, Glendor-road; Messrs. Clayton & Black, for Mrs. Block, alterations, 7, Medina-terrace; Mr. B. James, for Mr. Stoke, addition, 43, Sackville-road; Mr. E. E. Brown, for Captain Hollingsworth, house and garage, Kingsway; Mr. W. Kettle, for Mr. W. Colwell, garage, Arthur-street.

KIBWORTH.—Mr. W. J. Smith, of Market Harborough, has been requested to prepare plans for a new Wesleyan church.

LLANELLY.—The Borough Education Committee is to invite tenders for electric light fittings and installation at Central Boys' Schools.

LLANTRISANT.—It was reported to a meeting of the Llantrisant and Llantwit Fardre R.D.C. that the Great Western Colliery Co. intends to build 365 houses in Tynant. The company's intention was to put 65 houses in hand immediately and build 100 per annum in the ensuing three years.

LONDON (CAMBERWELL).—New street out of north-western side of Overhill-road, for White, Dent & Co.; buildings, Grove-lane, for Martin & Co.; extension of premises, 53–57, High-street, for A. A. Keen.

(Continued on page 469.)

*See also our List of Contracts, Competitions, etc.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 2 0
Second Hard Stocks	3 17 0

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at King's Cross	2 13 3	Best Blue Pressed Staffs.	9 11 6
Do. grooved for plaster	2 15 3	Do. Bullnose	10 1 6
Do. Bullnose	3 8 3	Blue Wire Cuts	7 11 6
Best Stourbridge Fire brick :—			
2½ in.	11 3 0	3 in.	13 2 0
GLAZED BRICKS—			
Best White Ivory, and Salt Glazed Stretchers	22 0 0	D'ble Str'tch'rs	30 10 0
		D'ble Headers	27 10 0
Headers	21 10 0	One Side and two Ends	31 10 0
Quoins. Bullnose and 4½ in. Flats	28 10 0	Two Sides and one End	32 10 0
		Splays and Squints	30 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London.

	s. d.		s. d.
2 in. per yd. super	2 1	3 in. per yd. super	2 9
2½ in. "	2 5	4 in. "	3 7

	s. d.	
Thames Ballast	10 6	per yard.
Pit Sand	14 9	" "
Thames Sand	15 6	" "
Best Washed Sand	15 6	" "
½ in. Shingle for Ferro-Concrete	14 0	" "
¾ in. " "	15 0	" "
¾ in. Broken Brick	10 6	" "
Pan Breeze	5 6	" "

delivered 2 miles radius Paddington.

Per ton delivered in London area in full van loads.

Best Portland Cement, British Standard Specification Test £2 18 0 to £3 51/- alongside at Vauxhall in 80-ton lots.	£3 3 6
Ferrocrete per ton extra on above	0 10 0
Super Cement	4 8 0
Roman Cement	8 15 0
Parian Cement	5 13 0
Keene's Cement, White	5 8 0
" " Pink	5 3 0
Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" Fine	5 12 0
Sirapite, Coarse	3 9 6
" Finish	3 17 6
Grey Stone Lime	2 10 9
Chalk Lime	2 10 9
Best Ground Blue Lias Lime	2 13 6
Hair	17 0 0
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months, carr. pd.

Stourbridge Fireclay in s'cks 35s. 0d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 9½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	2 11½
PORTLAND STONE— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4
Do. do. delivered on road wagons at above stations, per ft. cube	4 5
White basebed, 3d. per ft. cube extra.	
NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.	
HOPTON-WOOD STONE. Delivered at any Goods Station, London.	
Small random blocks, up to 10 ft. cube. Per ft. cube	7/-
Random blocks from 10 ft. and over "	17/-
Sawn two sides "	27/-
Sawn three or four sides "	32/-

	s. d.
YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station London.	
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per Ft. Super	5 3
6 in. rubbed two sides, ditto "	5 9
3 in. sawn two sides slabs (random sizes) "	2 1½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 5½
1½ in. to 2 in. ditto, ditto "	1 3
HARD YORK— Delivered at any Goods Station London.	
Scappled random blocks Per Ft. Cube	5 6
6 in. sawn two sides landing to sizes (under 40 ft. super.) Per Ft. Super	5 4½
6 in. rubbed two sides ditto "	6 0½
4 in. sawn two sides slabs (random sizes) "	2 10
3 in. ditto. ditto "	2 5
2 in. self-faced random flags Per Yard Super	7 11

ARTIFICIAL STONE.

Delivered in London Area in full van loads.	s. d.
Plain per ft. cube	6 6
Moulded " "	7 9
Cills " "	8 3

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£34 0	3 × 6	£25 0
4 × 9	34 0	3 × 11	34 0
4 × 8	29 0	2 × 11	34 0
4 × 7	28 0	3 × 9	33 0
3 × 8	26 10	2½ × 9	33 0
3 × 7	26 0	3 × 4½	24 0
2½ × 7	26 0	3 × 4	24 0

WOOD (*Continued*).

PLANED BOARDS.

1 × 11	£38 10	1 × 9	£36 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
⅞	21/-	1¼	33/6
⅞	23/-	1½	38/6
1	26/6		

TONGUED AND GROOVED FLOORING. Inches.	per sq.
1	26/6
1¼	33/6
1½	38/6

MATCHINGS (BEST). Inches	per sq.
⅝	17/6
¾	22/-
1	26/-

Inches	BATTENS	s. d.
⅞ × 2		2 4 per 100 ft.

SAWN LATHS.

Per bundle				0	2 10
Dry Wainscot Oak, per ft. super, as inch	0	2	0 to	0	2 6
¾ in. do. do.	0	1	6 to	0	2 0
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	1	9 to	0	2 6
Cuba Mahogany	0	3	0 to	0	3 6
Teak (Rangoon, Moulmein or Java), per load	45	0	0 to	50	0 0
American Whitewood planks, per ft. cube	0	14	0 to	0	16 0
Best Scotch Glue, per cwt.	4	10	0 to	—	
Liquid Glue, per cwt.	4	7	0 to	5	10 0

SLATES.

1st quality slates from Bangor or Portmadoc in truck loads delivered London area. Per 1,000 of 1,200.

	£ s. d.		£ s. d.
24 by 12	37 12 6	18 by 10	21 2 6
22 by 12	34 0 0	18 by 9	18 12 6
22 by 11	31 5 0	16 by 10	17 12 6
20 by 12	29 15 0	16 by 8	13 15 0
20 by 10	25 12 6		

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	5 7 6
Ditto hand made ditto	5 12 6
Ornamental ditto	5 17 6
Hip and valley tiles (per dozen) Hand made	0 9 6
Hip and valley tiles (per dozen) Machine made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	£ s. d.
R. S. Joists, cut and fitted	13 10 0
Plain Compound Girders	15 10 0
" Stanchions	17 10 0
In Roof Work	20 10 0

MILD STEEL ROUNDS.
To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
⅜ in.	16 10 0	⅜ in. to ½ in.	13 10 0
½ in.	14 10 0	½ in. to 2½ in.	13 0 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes.	Fittings.	Flanges.
Gas	52½%	52½%	62½%
Water	47½%	47½%	57½%
Steam	42½%	42½%	52½%
Galv'd—			
Gas	37½%	42½%	52½%
Water	31½%	37½%	47½%
Steam	25 %	32½%	42½%

C.I. HALF-ROUND GUTTERS—London Prices, ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/1½	11d.	3½d.
3½ in.	1/2½	1/0½	3½d.
4 in.	1/4	1/1½	3½d.
4½ in.	1/5½	1/4	4d.
5 in.	1/7½	1/5½	5d.

O.G. GUTTERS.

3 in.	1/6½	1/2½	3½d.
3½ in.	1/6½	1/2½	3½d.
4 in.	1/7½	1/4	3½d.
4½ in.	1/9½	1/6½	4d.
5 in.	2/1½	1/9	5d.

RAIN-WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/7½	1/1½	1/8
2½ in. "	1/9½	1/4	2/0½
3 in. "	2/1½	1/8	2/5½
3½ in. "	2/6½	1/11½	2/10½
4 in. "	2/11½	2/4½	3/5½

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts plain	3 0½	2 2½	2 8
2½ in. "	3 6½	2 5½	3 3½
3 in. "	4 2½	2 8	4 0½
3½ in. "	4 7	3 3½	4 8½
4 in. "	5 1	3 9½	5 5

L.C.C. COATED DRAIN PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
3 in. per yd. in 9ft. lengths	4 9	5 8	8 10
4 in. " "	6 3	6 8	11 4
5 in. " "	7 6	11 6	18 2
6 in. " "	8 10	14 4	23 5

	Per ton in London. £ s. d.		
IRON—			
Common Bars	14 0 0	to	15 0 0
Staffordshire Crown Bars—good merchant quality	14 10 0	..	15 10 0
Staffordshire "Marked Bars"	17 0 0	..	18 0 0
Mild Steel Bars	18 10 0	..	14 10 0

METALS (*Continued*).

	£ s. d.		£ s. d.
Steel Bars, Ferro-Concrete quality, basis price	13 10 0	..	14 10 0
Hoop Iron, basis price	16 10 0	..	17 10 0
" Galvanised	31 0 0	..	32 0 0
Soft Steel Sheets, Black— Ordinary sizes to 20 g.	15 10 0	..	16 10 0
" " " 24 g.	16 10 0	..	17 10 0
" " " 26 g.	18 10 0	..	19 10 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	21 10 0	..	22 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	22 10 0	..	23 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	24 10 0	..	26 10 0
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9 ft. to 20 g.	21 0 0	..	22 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	21 10 0	..	22 10 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	23 10 0	..	24 10 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	23 10 0	..	24 10 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 10 0	..	26 10 0
Best Soft Steel Sheets, 26 g.	26 0 0	..	27 0 0
Cut Nails, 3in. to 6 in. (under 3in. usual trade extras.)	21 10 0	..	23 0 0

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/4 to 1/7 per foot super.

LEAD, &c.

(Delivered in London.)	£ s. d.		
LEAD—Sheet, English, 4 lb. and up	35 0 0	..	—
Pipe in coils	35 10 0	..	—
Soil Pipe	38 0 0	..	—
Compo pipe	39 0 0	..	—

NOTE—Country delivery, 20s. per ton extra : lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills per ton	22 10 0	..	—
Do., ex country, carriage forward per ton	23 10 0	..	—

PLUMBERS' BRASS WORK.

Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

NEW RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz

CAPS AND SCREWS.

1½ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2in.
7/6	11/6	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES. S.F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1½ in.	1½ in.	2 in.	3 in.
8 lbs. P. traps	33/-	41/-	56/-	101/- per doz.
8 lbs. S. traps	35/-	45/-	66/-	126/- "

COPPER—	£ s. d.	
Strong Sheet per lb.	0 2 3	.. —
Thin " "	0 2 4	.. —
Copper nails " "	0 2 3	.. —
Copper wire " "	0 2 4	.. —
TIN—English Ingots "	0 2 0	.. —
SOLDER—Plumbers' "	0 0 11	.. —
Tinmen's "	0 1 1	.. —
Blowpipe "	0 1 3	.. —

PAINTS, &c.

	£ s. d.
Raw Linseed Oil, in pipes per gallon	0 3 6
" " " in barrels "	0 3 8
" " " in drums "	0 3 11
Boiled " " in barrels "	0 4 0
" " " in drums "	0 4 2
Turpentine in barrels "	0 6 3
" in drums (10 gall.) "	0 6 6
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)	56 5 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered	77 0 0
Red Lead, Dry (packages extra) per ton	42 0 0
Best Linseed Oil Putty per cwt.	0 16 0
Filocol per cwt.	0 15 6
Size. XD Quality fkn.	0 3 6

[*Concluded on next page.*]

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (contd.)

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft
15 oz. fourths	3½d.	32 oz. fourths.....	8½d
15 „ thirds	4½d.	32 „ thirds.....	10½d.
21 „ fourths	5d.	Obscured Sheet, 15oz.	4d.
21 „ thirds	6½d.	21 „	5½d.
26 „ fourths	6d.	Fluted 15oz. 6½d. 21oz.	9½d.
26 „ thirds.....	7½d.	En'lled 15 „ 5½d., 21 „	7½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
Rolled plate	4½d.
Rough rolled	5½d.
Rough rolled	5½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white.....	6½d.
Ditto, tinted	9d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

VARNISHES, &c.

		Per gallon. £ s. d.
Oak Varnish	Outside	0 14 0
Fine ditto	ditto	0 16 0
Fine Copal	ditto	0 18 0
Pale Copal	ditto	1 0 0
Pale Copal Carriage	ditto	1 4 0
Best ditto.....	ditto	1 12 0
Floor Varnish.....	Inside	0 18 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal flatting	ditto	1 0 6
Hard drying Oak	ditto	0 16 0
Fine Hard drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 0
Pale ditto	ditto	1 2 0
Best ditto	ditto	1 12 0
Best Japan Gold Size.....		0 12 0
Best Black Japan.....		0 12 0
Oak and Mahogany Stain (water).....		0 12 0
Brunswick Black.....		0 9 0
Berlin Black.....		0 14 0
Knotting (patent)		1 5 0
French and Brush Polish.....		0 17 6
Liquid Dryers in Terebine.....		0 9 0
Cuirass Black Enamel.....		0 7 0

NEW BUILDINGS IN SCOTLAND.

Strathallan. — PUBLIC HALL. — Sir James Roberts, of Strathallan Castle, has offered to provide a public hall for the village of Strathallan, near Auchterarder, Perthshire.

Aberdeen.—CLUB.—Plans have been prepared by Mr. G. Watt, architect, 214, Union-street, for a boys' club in the east end of the town. The committee has applied to the T.C. for a site at the north-west corner of the Gallowgate open space.

Bo'ness.—HOUSES.—The Linlithgow District Committee of the Linlithgowshire C.C. has agreed to grant a loan to the Kinneil Coal Co., Bo'ness, to enable them to carry out a housing scheme for their employees. They propose to build 100 houses, and the total cost is estimated at £30,000.

Whiteinch.—BATHS.—A site has been obtained in George-street for the erection of the baths and washhouses for the Glasgow Corporation for the Whiteinch and neighbouring districts. The tenders for the buildings amount to about £50,000.

Gourock.— HOSPITAL.— Building operations will be commenced next week in connection with the erection of a cottage hospital at Midton Farm.

Sauchie.—CHURCH.—Plans have been prepared for the Lambert Memorial Church proposed to be erected by the Sauchie and Fishcross United Free Church.

Dunfermline.—ALTERATIONS.—The Dean of Guild Court has passed plans submitted by Mr. Henry Ness, Manbeath Colliery, for alterations and additions to nine houses in Dundas-street, Townhill.

Aberdeen.—MEMORIAL.—The plans of the Cowdray Hall and war memorial have been remitted to the Streets and Roads Committee to consider the question of the line of the pavement.

Duntocher.—HOUSES.—The Eastern District Committee of Dumbarton C.C. has decided to erect 136 houses, the cost of which is estimated at £55,000. In addition to this scheme a further 200 houses will be erected at Duntocher.

PROPOSED NEW BUILDINGS, &c.

(*Continued from p.* 467)

LONDON (HACKNEY).—Plans passed by B.C.: Drainage at factory, 24A, Sutton-place, for J. Hamilton & Son; additions, Clapton Laundry Co.'s premises, Evering-road, for S. Hayworth & Son; alterations, 7, Clapton Common, for J. Warden; factory, Somerford-grove, for H. Bradford & Son; additions, Snowflake Laundry premises, Tilia-road, for W. Silk & Son; warehouse, 14, Lower Clapton-road, for F. Bellenie; four shops, 271, Mare-street, for H. Dicksee.

LONDON (STOKE NEWINGTON).—Mission hall, Howard-road, for Mr. S. A. S. Yeo.

LONGBENTON.—Messrs. Bedson, Hall & Thompson, with Mr. Stephenson (architect), have interviewed the Council relative to the provision of sewerage facilities on the Benton Lodge Estate, where a large number of houses are to be erected.

MOUNTAIN ASH.—The U.D.C. has urged the Glamorgan County Council to expedite the putting in hand of the work of widening Cardiff-road.

NEATH.—The R.D.C. has made application to compulsorily acquire 2¼ acres of land at Glynneath for erection of 16 houses.

NELSON.—The T.C. has decided to apply to the Electricity Commissioners for permission to install a turbo-generating set of 6,000 kilowatt capacity, at an estimated cost of £24,000, and for sanction to borrow the sum from the Unemployment Grants Committee of the Ministry of Health. Mr. A. Edmondson, owner of Dobson House Farm, and Mr. H. M. Walton, owner of the Chapel House estate, have submitted proposals to the T.C. to erect dwelling-houses on their estates subject to satisfactory financial assistance being granted in pursuance of the Housing Act, 1923. The Council deferred the matter. Mr. A. Edmondson is proposing to erect nine houses in Pont-street. The Nelson Co-operative and Industrial Society are proposing alterations to premises, 1-3, Railway-street.

NEWCASTLE.—Plans have been passed by the Town Improvement and Streets' Committee for the erection of a motor garage to hold 50 cars, on the Milvain Estate, Westgate Road. The architect is Mr. T. K. White, of 55, Pilgrim-street, Newcastle.— With the object of stimulating the erection of better class houses by private enterprise, the Newcastle T.C. has adopted a recommendation from its Housing Committee allocating 25 acres of the High Heaton Housing Estate for erection of privately-owned houses. The land was originally purchased by the Corporation for housing purposes, and the step has been taken in view of the Ministry's refusal to sanction further municipal schemes for the present. The estate is to be developed on modern lines, and about 300 houses will be built.

NEWPORT (MON).—The Corporation is formulating a scheme for the conversion of the premises, "Clytha," Park-road, and Bryngwyn Nursing Home, which adjoins, and are to be purchased, leasehold, at £3,425.

PENARTH.—The Penarth U.D.C. has been offered, and accepted, the gift of Beecroft, Stanwell-road, from Capt. Jenkins for conversion to a child welfare and maternity centre. The Council has decided to press for sanction to erection of further municipal houses on the ground that cottagers' needs are not adequately met by private enterprise. Messrs. David Davies & Sons have applied to U.D.C. for land for erection of houses. The Dinas Powis Parish Council has received notification that land for Eastbrook recreation scheme will be placed at its disposal subject to building of wall, 6 ft. high, at northern and eastern boundaries. This is estimated to cost £800 to £1,000.

PURLEY.—A movement is on foot to provide a permanent building for Purley Men's Club, the cost being estimated at £5,000.

REIGATE.—The R.D.C. has decided that 211 new houses are required in the area, and it has been decided to offer inducements to private builders to erect them.

RHONDDA.—The Education Committee has instructed preparation of plans for additions to Pentre Secondary School.

RICHMOND (SURREY).—The Red Lion-street area has, it is reported, been disposed of to a syndicate, and plans are being prepared in connection with the scheme and will be shortly presented to the Highways Committee of the T.C. It is proposed to erect 20 first-class shops. Messrs. Yates, Cook & Darbyshire are the architects.

SALE.—The U.D.C. have instructed their Surveyor to prepare plans and obtain estimates for the erection of a new and permanent bandstand in the park.

SCULCOATES.—Plans have been passed by the R.D.C. for 118 houses on Hedon-road. They were submitted by Mr. J. Emmerson, who asked the Council to increase the subsidy to £25 per house, in accordance with their powers, on account of the extra cost of labour and the carriage of materials. The matter was referred to the Housing Committee.

SEATON CAREW.—A scheme for developing this little seaside resort near West Hartlepool, at an estimated cost of £42,000, is making headway.

SHARDLOW.—The B.G. has decided to erect a new infirmary.

SHEFFIELD.—Plans passed: 12 houses, Handsworth Estate, for Estates Committee, Corporation: 10 houses, Woodhouse Estate, for Estates Committee, Corporation; two houses, saleshops, workshops, and garage, Middlewood-road, for Mr. Fred Arundel; two houses, School Green-lane, for Mr. W. F. Hides; two houses, Rundle-road, for Messrs. Dyson & Co.; bungalow, road off Abbey-lane, for Mr. F. Wolstenholme; bungalow, Muskoka-drive, for Mr. G. M. Taylor; house, Ringinglowe-road, for Mr. L. L. Allen; house, Kennedy and Chatfield-roads, for Messrs. S. Higton & Sons; bungalow, Abbey-lane and Bocking-lane, for Mr. James; four houses, School Green-lane, for Mr. R. Blenkhorne; house, Sandford-grove-road, for Mr W. A. Knight; house, School Green-lane, for Mr. E. V. Wolstenholme; house, off Abbey-lane, for Mr. J. V. Auckland; two houses, Archer-lane, for Mr. J. J. Hawksworth; four houses, Norton Lees-lane, for Messrs. Hammett & Co.; two houses and garage, Whirlowdale-road, for Mr. T. H. Bailey; bungalow, School Green-lane, for Mr. H. Belk.

SOWERBY BRIDGE.—The U.D.C. is making application to the Ministry of Health for sanction to borrow £4,510 in order to build 14 houses on the Albert-road, site. The Council hope to sell these houses, which will be built to suit customers' requirements.

STAINFORTH.—The Thorne Education Committee has decided to erect a new school at Stainforth, with accommodation for 1,000 children.

STALYBRIDGE.—The T.C. is seeking sanction for borrowing £9,040 for street improvements, and £4,650 for a new road from Harrison-street to Cambridge-street and Church-walk, as relief work.

STOKESLEY.—Plans approved for two houses at Hutton Rudby, for Mr. J. Bartram; new bungalow, Great Broughton, Mrs. Fawcett, has been approved by the R.D.C.

EXTERNAL TEXTURAL FINISH OF CONCRETE BUILDINGS.

ON the morning of Thursday of this week Mr. Frederic Coleman gave an illustrated lecture at the West End Cinema in Coventry-street. The lecturer's general subject was the external textural finish of concrete buildings and structures of various sorts. He showed a film on stucco textures, showing the possibilities that are inherent in a stucco made from white Portland cement. His theme was beauty and the application of a plastic surface to our buildings—a plastic exterior hardening into stone, in unlimited variations of colour and textures. The film showed not only the finishes that can be obtained, but how simply they can be secured. The tones of the buildings shown in the film were made possible, he claimed, by the use of white Portland cement, which provided the white neutral colour on and with which the colour effects were built up. The textures shown and described were obtained by the use of ordinary tools. He pointed out that the texture should always be the result of the application of the stucco rather than the manipulation of the stucco to obtain the effect; the first was natural, true, and honest, and the latter was a straining after an effect, and the straining would show more than the effect.

After illustrating sheathed-frame construction, back-plaster construction, and the application of stucco to masonry, a workman was shown applying both simple and textural finishes one after another. A dozen residences of various sorts were shown on the screen, each finished in a different manner. After the pictures of the houses and a close view of the textural finish had been given, the workman was shown carrying out the actual manipulation which provided that particular finish. As an object lesson of how stucco work should be done this was admirable.

The lecturer then dealt at some length with a magnificent piece of concrete statuary recently completed in Chicago, called the "Fountain of Time." He read a portion of an address by the sculptor, Mr. Lorado Taft, and several explanatory notes by Mr. J. J. Earley, who carried out the work. The series of photographs of the finished piece showing the methods of construction, and close views giving an idea of the architectural lines and the textural finish of the group, were much appreciated by the audience. Next came a series of coloured photographs, taken in two beautiful gardens in the vicinity of Boston. Swimming-pools, fountains, balustrades, stairways, pergolas, and summer houses in white Portland cement were shown to excellent advantage.

The lecturer then showed a number of pictures of work in London and other parts of England in which white Portland cement had been used in the form of stucco or cast stone. Finally, he produced a couple of score of illustrations of the best class of cast-stone work in America. Intermingled with these were pictures of some American architectural works of the last few years.

The lecture will be given for a second and last time at the West End Cinema in Coventry-street on the morning of Thursday next, September 27.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	6
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	35	0
Add if in underpinning in short lengths	" "	7	6
Add if in floors 6 in. thick	" "	3	6
Add if in beams	" "	4	0
Add if aggregate 1 : 2: 4	" "	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	3	3

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	30	0	0
Add if in stocks	"	7	10	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	2	0	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—

		s.	d.
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	1
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	4	3
Three-quarter-inch vertical damp course	" "	9	0
¾ inch on flats in two thicknesses	" "	6	6
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	3

MASON.

		s.	d.
York stone templates fixed	per foot cube	12	6
York stone sills fixed	" "	21	6
Bath stone and all labour fixed	" "	10	6
Portland stone fixed	" "	19	6

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	"	80	9
Do. 24 in. × 12 in. Do. Do.	"	90	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	5	3
Do. joists	" "	5	9
Do. roofs, floors and partitions	" "	6	3
Do. trusses	" "	8	3

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	38/-	44/-	50/-	80/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	50	0
Do. to beams	per ft. sup.	1	0
Centres for arches	"	1	6
Gutter boards and bearers	"	1	0

FLOORING.		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		49/-	58/-	67/-
Do. tongued and grooved	"		54/-	65/-	72/-
Do. matchings	"	45/-	55/-		
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/0	2/6

SASHES AND FRAMES.		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	1
Add for fitting and fixing	" "	0	4
Deal-cased frames with 1 in. inner and outer linings, 1¼ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights ; average size	" "	3	9

DOORS.		1½"	1¾"	2"
Two-panel square framed	per ft. sup	2/1	2/4	2/6
Four-panel Do.	"	2/5	2/8	2/11
Two-panel moulded both sides	"	2/8	2/11	3/2
Four-panel Do. Do.	"	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/8	1/9	2/0
Deal shelves and bearers	"	1/5	1/7	1/10
Add if cross tongued	"	2d.	2d.	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1½ in.	per ft. run.	0	9
Mahogany handrail ; average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4
Sash fasteners	11½d.	Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	17	0
Plain compound girders	"	20	0
Do. stanchions	"	23	0
In roof work	"	28	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/11	2/4½	3/7	4/-
Ogee Do. Do.	"	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	"	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	51	0
Do. Do. in flats	"	49	0
Extra labour and solder in coated cesspools	each	6	9
Welt joint	per ft. run.	0	6
Soldered seam	" "	1	6
Copper nailing	"	0	6

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	10d.	1/6	1/9	3/1	3/10	
Do. service	"	1/5	1/11	2/3	3/6		6/2
Do. soil	"					3/3	8/2
Bends in lead pipe	each						
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6	
Red lead joints	"	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	"				14/7	19/6	
Bib cocks and joints	"	6/4	9/7	15/4	41/-		
Stop cocks and joints	"	15/4	17/2	25/8	64/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	3
Do. Do. Sirapite	" "	2	6
Do. Do. Keen's	" "	3	6
Add sawn lathing	" "	1	5
Add metal lathing	" "	2	3
Portland cement screed	" "	1	10
Do. plain face	" "	3	0
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	9

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	0	9
26 oz. Do.	" "	1	1
Obscured sheet	" "	1	3
⅛ in. rolled plate	" "	0	9
¼ in. rough rolled or cast plate	" "	0	11
¼ in. wired cast plate	" "	1	5

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	" "	0	7
Plain painting 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup.	0	6
French polishing	" "	1	2
Preparing for and hanging paper	per piece	2/- to 4/-	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

PATENTS.*

APPLICATIONS PUBLISHED.

199,473.—R. W. Newcombe: Coverings for floors or walls.

199,504.—H. Hamaguchi: Compositions for washing off paint.

199,527.—S. S. Lowry: Slab buildings.

199,542.—J. H. Cox: Extending dining tables.

199,545.—L. Santarella: Construction of reinforced-concrete trusses.

199,552.—J. H. Walker and R. E. Knight: Construction of the steel reinforcement in reinforced-concrete structures.

199,571.—W. G. Hyde: Window sashes.

199,575.—O. Nickel and R. Markwitz: Process for the manufacture of cement.

199,598.—S. A. Baker: Fencing and gates.

199,628.—J. S. Hall: Fastening or securing device for sash windows.

199,758.—M. Haramiishi: Ferro-concrete structures.

199,763 & 200,030.—Waring & Gillow, Ltd., and T. Johnston: Extensible tables.

199,795.—W. Feldenheimer and W. W. Plowman: Purification of clay.

199,802.—G. L. Huysmans: Process for the graphic decoration and engraving in metallic relief of glass, pottery, ceramic products.

199,822.—A. J. Goodridge: Apparatus for repairing broken pipes.

199,860.—H. Wade (Norton Co.): Safety tread tiles.

199,888.—C. E. P. Gabriel: Holding devices for slidable members, such as doors and windows.

199,889.—J. Birch & Sons, Ltd., C. Birch, and S. H. Hinde: Fastener for casements, doors, and the like.

199,912.—S. S. Rogers and Broad & Co., Ltd.: Road manhole frames and covers.

199,986.—Aluminium Plant and Vessel Co., Ltd., T. E. French and S. W. T. Paine: Internal manway or handway doors, lids or covers.

186,627.—R. Junod: Combination locks.

200,125.—W. G. Mueller: Apparatus for straining and securing wires around bales, boxes, and the like.

200,134.—T. Shields (F. N. Burt Co., Ltd.): Box-making machines.

200,187.—E. C. R. Marks (Soc. Italiana P. Roveri & Co.): Blinds for shop fronts, doors, windows.

200,199.—W. C. Chapman: Upholstered furniture vehicle seats, mattresses, and the like.

200,227.—W. L. Garrett and Bristol Aeroplane Co., Ltd.: Door-retaining devices.

200,235.—J. Douglas: Domestic ranges.

200,240.—G. Rutter: Chimneys in dwelling-houses.

200,245.—W. S. C. Glover: Device for fastening doors, windows.

200,258.—Midland Pressing & Piercing Co., Ltd., and C. Fisher: Window-sash fasteners.

200,260.—J. Devonald: Plug tap or stop cock.

200,266.—J. Frei (G. Richt and C. Hiemer): Water tap.

200,276.—F. C. C. Rings and Anglo-Danish Concrete Construction Co., Ltd.: Blockwork floors, roofs and the like.

200,283.—R. M. Wigley: Tiles for decorative building or other purposes.

200,291.—G. H. Smith & H. Smith: Fasteners for windows sashes.

200,299.—P. C. Barton: Casement stays or fasteners.

200,311.—J. Sperni: Method for the manufacture of magnesian cement.

200,328.—O. G. Henderson: Combination desk and chair.

200,388.—J. Marshall: Poultry houses.

200,389.—C. E. Bunker and W. W. Dawson: Castors.

185,129.—K. Esperstedt: Means for mounting and securing sheets of glass, marble slabs, mirrors, and the like, to walls and ceilings.

200,399.—F. Wilson: Cabinets.

200,401.—R. Kennedy: Cattle stalls, stables or the like.

200,407.—C. P. Chamberlin: Sash-operating mechanisms for windows.

200,419.—J. McWhirter: Concrete or other cast slabs or blocks.

200,425.—A. Elmendorff and R. J. Marx: Manufacture of veneered pulp and other boards, and a process for making the same.

200,444.—F. W. Rurade: Building brick.

201,195.—B. Morton: Roads.

201,196.—A. G. Hanvey: Means of trimming around fire-place and forming hearth.

201,205.—T. Marshall: Means for heating buildings by means of hot air.

201,210.—E. P. Appleyard: Fire alarms.

201, 241.—A. M. Callow: Grabs.

201,242.—J. E. Hamilton and E. P. Stevenson: Hydraulic lifting and lowering apparatus.

201,255.—E. M. Lawrence: Door latches.

201,259.—H. B. Toone and H. S. Toone: Veneered panels, slabs, and other objects.

201,262.—G. M. Trimingham: Sliding windows.

201,284.—E. W. Robert and L. F. W. Leese: Building unit and method of erecting floors or roofs and ceilings therewith.

201,316.—H. Beierbach: Building unit.

201,330.—A. Lythe: Ladder bracket.

201,495.—O. Y. Imray (Soc. Fabrica Tavelloni Achille Orzali & Co.): Building beams and slabs.

192,377.—H. H. Robertson Co.: Building material.

201,509.—M. Haramiishi: Ferro-concrete floors and walls.

200,856.—S. E. Conrad: Window-cleaner.

200,863.—P. Ross and S. Coxon: Indirect lighting.

181,684.—W. O. Vivarttas: Wrenches.

200,894.—K. M. A. Goddard: Construction of appliance for cleaning windows.

200,898.—F. M. Hilgerink: Apparatus for cleaning surfaces.

200,959.—W. Gibson and E. J. Pocock: Fire bridge for furnaces.

200,970.—A. G. Gray: Derricks or cranes.

201,006.—J. E. Claxton: Process of making road-paving material.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

TRADE NEWS.

Messrs. Joseph H. Bradshaw, Ltd., asphalte importers and contractors, have removed from 34, John Dalton-street, Manchester, to 4, St. Mary's Parsonage, Deansgate, Manchester (Telephone: Central 4359).

Messrs. Luckwood & Kesterton, wholesale builders' merchants, of Sentinel House, Southampton-row, W.C.1, have taken showrooms, offices and warehouse at 44-46, Eagle-street, Holborn, W.C.

Preston Corporation (Surveyor, Mr. J. S. Bullough, A.M.I.C.E., M.I.M. and Cy.E.) have placed the surfacing work in connection with their new arterial road in the hands of Messrs. William Shepherd & Sons, Ltd., Milkstone, Rochdale.

An informative booklet is issued by the Spedol Manufacturing Co., Ltd., of Brentford, Middlesex. It gives full information about the firm's manufactures, which include, in addition to high-grade paints, varnishes, liquid dryers, "Spemac" enamels, and the well-known rust-resisting coating marketed under the title of "Ferroarmor." A copy will be posted free upon application to the Spedol Manufacturing Co., Ltd., Brentford.

The increased use of road transport with heavily-laden lorries often causes plaster work to crack and fall. A thoroughly seasoned wood pulp board, however, if properly fixed, should be a permanently satisfactory substitute for lath and plaster. The weight alone is an important factor, as a quarter-inch thick lining weighs about one-fifth of the ordinary coating of plaster. White "Sundeala" boards are light in weight, as the method of manufacturing in a homogeneous mass makes the sheets very rigid and firm. The material, being waterproofed, is easily decorated without the liability of absorbing moisture and causing buckling.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.
* Denotes *accepted*. † Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

BARNSLEY.—For the erection of 82 houses on the Cundy Cross site, for the T.C. :—

*Fairhurst Bros., Wigan	£28,912

BARNSLEY.—For making-up roads, for the T.C. :—

*G. Mellor, Back-road, Keir-street	£598 0
*H. Medley & Son, Back-road, Hawthorne-street	397 5
*S. Taylor, Henshall-street	378 10
*S. Taylor, Milnes-street	198 0

BRADFORD.—Rebuilding warehouse premises at Leeds-road, for Messrs. M. Adam & Co. :—

*J. T. Wright & Son, Leeds.

BRADFORD.—For erection of warehouse and garages in Grattan-road, for Messrs. A. T. Patchett & Co. :—

*E. Fearnley & Son (*mason*), Bradford.
*Wm. Newell & Son (*joiner*), Bradford.
*Thos. Nelson & Son (*slater*), Bradford.
*A. Holmes (*plumber*), Bradford.
*A. C. Marsden (*plasterer*), Bradford.

BRADFORD.—For erection of two private residences in Haworth-road, for Messrs. Bannister & Son :—

*M. Booth & Sons (*mason*), Bradford.
*E. Fearnley & Son (*joiner*), Bradford.

BROMLEY.—For internal decoration of 68 houses, for the T.C. :—

*Woodhams & Tyler	£806 15

CHADDERTON.—For decorating the Town Hall, for the U.D.C. :—

*F. Drury, Ltd., Manchester.

CORWEN.—For erection of war memorial, and supplying and fixing four entrance gates and tablets :—

*Wm. Sterratt, Wrexham	£294 18

DEWSBURY.—For erection of houses at Beckett-lane, for the Corporation :—

*A. C. Smith (*substituted tender*)	£9,000

DUDLEY.—Erection of 20 houses on Woodside Site, for the T.C. :—

*C. Coulson	£7,195

FARSLEY.—For painting and decorating fire station and waiting-room, for the R.D.C. :—

*J. Marshall, Farsley.

HAMPTON.—For erection of 24 houses on Priory-road Site, for the U.D.C. Mr. S. H. Chambers, Surveyor to the Council, Public Offices, Hampton, Middlesex :—

Bedford & Co., Hampstead (24 houses)		£23,760
W. Griffiths & Sons, Chelsea	do.	15,372
Dilliway & Elvey, London	do.	15,324
Battiscombe & Harris, London	do.	14,450
Merritt & Sons, Hampton	do.	14,400
Barnards, Westminster	do.	14,320
Hidden & Co., Ltd., Brentford	do.	13,600
S. E. Moss, Southend-on-Sea	do.	11,760
Pettengell & Clark, Hitchin (12 houses)		6,900
*Rutherford & Woolford, Surbiton (12 houses)		5,532
H. March, Hampton (per pair)		1,060

HECKMONDWIKE.—For the erection of 30 houses for the U.D.C. :—

*R. Horsfall & Son, Liversedge.

LEEDS.—For structural alterations at the "Cock and Bottle" Hotel, Upperhead-row, for Messrs. G. W. Atkinson :—

*Pearson Bros., Sheepscar, Leeds.

LEEDS.—For extensions to nurses' home at the Leeds General Infirmary :—

*Hy. Atkinson & Sons, Leeds.

LEEDS.—For structural alterations to Messrs. Finglands premises, Guildford-street, for Messrs. A. & F. Moseleys :—

*T. Pearson, Leeds.

LEEDS.—For structural alterations to "Northcote," Roundhay, for Mr. G. Whittington :—

*J. T. Wright & Sons, Leeds.

LONDON.—For rebuilding the "Camden Stores" public-house, Park-street, N.W., for Messrs. Truman, Hanbury, Buxton & Co., Ltd. Mr. A. E. Sewell, architect, 91, Brick-lane, E. 1. Quantities by Mr. Wm. Gilbert, 74, Broad-street-avenue, E.C. 2 :—

Knight & Son	£12,990
Johnson Bros.	12,975
Moffatt Bros.	12,974
Wm. Harper, Ltd.	12,938
Dearing & Co.	12,899
Courtney & Fairbairn, Ltd.	12,899
Snewin Bros.	12,747
Lawrence & Son	12,644
Sheffield Bros.	12,575
Everitt & Son	12,399
H. V. Clogg	12,277
Schooley & Son	11,834

LONDON.—For painting at Prospect-terrace, for the St. Pancras B.C. :—

Whitby's, Ltd.	£414
Works Department	350
Albert Monk	320
Holland & Hannen & Cubitts, Ltd.	281
Marels & Co., Ltd.	268
*Marchant, Hirst & Co.	268

LONDON.—"Natsopa House," for the National Society of Printers' Assistants. Messrs. Harding & Williams, architects, 13, New-street, Leicester. Quantities by Mr. John T. Burt, F.S.I., 6A, St. Martin's, Leicester :—

John Greenwood, Ltd., London, E.C.4	£11,822 0
Higgs & Hills, Ltd., South Lambeth, S.E.	11,544 0
Wm. Moss & Sons, Ltd., London, W.C.1	11,137 0
Jas. Carmichael, Ltd., Wandsworth	11,000 0
A. Roberts & Co., Ltd., Kensington, W.3	10,995 0
F. G. Minter, Putney, S.W.15	10,900 0
J. & J. Dean, Leyton, E.10	10,834 15
Bovis, Ltd., London, W.1	10,555 0
Foster & Dicksee, Ltd., Rugby	10,456 0
Guild of Builders, Ltd., London, W.C.1	10,398 0
Architects' estimate	10,264 0
*Arthur Vigor, Ltd., London, S.W.1	9,8[illegible]8 0

NEWCASTLE-ON-TYNE.—For construction of road between Newcastle and Tynemouth, for the T.C.:—

*G. Mackay & Son £119,919 2 7

PORTSMOUTH.—For re-decorations, &c., at "The Fratton Cellars," for the Kemp Town Brewery. Mr. F. T. Cawthorn, architect, Brighton :—

*John Lay & Co., Portsmouth.

SHEFFIELD.—Construction of 6 in. water-pipe line, for the T.C. :—

*H. & E. Andrews, Sheffield..... £710 13 6

SHEFFIELD.—Supply of 300 4 in. cast-iron pipes, to the Water Committee :—

*Staveley Coal & Iron Co..... £323 0 4

SHERINGHAM.—For erection of stables at store yard, for the U.D.C. :—

Chapman Bros.	£567 0 0
R. W. Anderson	500 17 10
W. Cooper	491 6 2
Sadler & Son	488 16 0
*Blyth & Son	469 0 0

STOCKTON.—For erection of a new gas-holder with a capacity of 8,000,000 cu. ft., for the Montreal Light Heat & Power Co. :—

*Ashmore, Benson, Pease & Co. £100,000

WHITWORTH.—For the rebuilding of Lloyd-street School, Whitworth :—

Building—Sutcliffe Bros., Whitworth.
**Iron work, floor and roof*—Webb Bros., Bury.
**Tiling and flooring*—Wild Bros., Rochdale.

WIGAN.—For the supply and installation at the Wigan Corporation Gas Works of modern horizontal retorts with coal and coke handling plants :—

*Drakes, Ltd., Halifax.

A Builder's Estate.

Mr. John Joseph Inward, of 29, Endymion-road, Finsbury Park, N., of Messrs. Inward & Lovell, builders, left £19,100.

The Housing Subsidy.

Grants of £100 per house are to be offered to builders and owner occupiers by the Carlisle Corporation in connection with the Government's new housing policy.

Under the Government's new scheme the West Hartlepool T.C. proposes to erect an additional 36 houses by direct labour, and to invite local builders to tender for a further 18. A subsidy varying from £80 to £100 is to be offered for houses built by private enterprise.

The Mid and North Northumberland Master Builders' and Allied Trades' Association has decided to appoint a committee to consider the application of the Housing Act, 1923, in the area covered by the organisation, which extends from Ashington, through Bedlington, Choppington and Morpeth, up to Berwick, with a desire to prepare, or assist in preparing, schemes and to confer with local authorities in order to carry the Act to an effective issue.

The Greasborough Urban Council has decided, with a view to stimulating building by private enterprise, to offer a subsidy of £100 a house.

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